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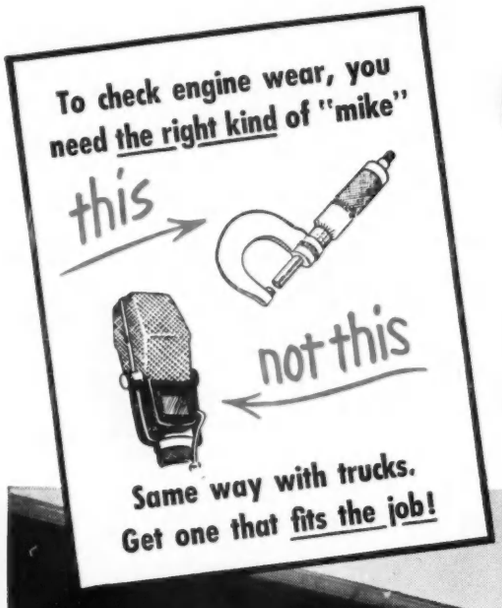
COMMERCIAL CAR JOURNAL
THE MAGAZINE FOR FLEET OPERATORS



Hauling costs stay down with dependable DODGE "Job-Rated" TRUCKS

On long hauls, short hauls, any haul at all, you can depend on Dodge "*Job-Rated*" Trucks to keep costs down.

Fleet operators from coast to coast save on operating and upkeep expense because these rugged, long-lasting trucks have such economy features as chrome-plated top piston rings, exhaust valve seat inserts and many others.

They save time and work as well, for Dodge trucks are "*Job-Rated*" to handle better, steer easier and maneuver faster in *your* kind of hauling. That's because they have shorter wheelbases, wider tread front axles, shorter turning diameters and other easy handling advantages.

See and try the Dodge "*Job-Rated*" Trucks that fit *your* fleet operation. Find out how you will benefit by the increased power with top economy, the new easier handling, smoother riding, extra safety and scores of other important advantages. Visit your nearby Dodge dealer—soon.

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A Dodge "*Job-Rated*" truck is engineered *at the factory* to fit a specific job . . . save you money . . . last longer.

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Every unit that SUPPORTS the load—frame, axles, springs, wheels, tires, and others—is engineered right to provide the strength and capacity needed.

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Transp.

JOURNAL

CCJ

READER DIGEST

New Garrett Shop Slices Maintenance Bill

Super shop for diesel highway fleet cuts maintenance bill $5,000 in first six months; features on-the-spot routine service with completely portable equipment. Rebuilt sections have some intriguing innovations such as spray booth for engines. See page 52.

Driver Training Includes Time in Shop

Common carrier requires all new drivers to spend time in shop to learn essentials of vehicle function, maintenance and safety. Special course in under combined guidance of safety director and supervisor of maintenance. See page 56.

Engine Deposits—Piston Ring Wear

Gulf Oil engineers discuss common causes of engine deposits, show how to reduce them, at West Coast SAE meeting. Chrome-plated rings, cast-in groove inserts, improved cylinder liner materials cut piston ring wear, according to Perfect Circle engineers. See page 58.

Accidents Drop in Seattle Transit

Seattle's labor market is such that the Transit System has a difficult time getting suitable drivers. But super driver training program makes top grade material out of inexperienced men. Proof of the pudding is Seattle's low accident rate. For a training program worth studying in detail, see page 62.

Overhauled Procedures Cut Engine Overhauls

Another fleet superintendent proves that constructive changes in operation and maintenance procedures can pay off. Goldblatt's, a Chicago department store, made six such changes, each with excellent results. Here's just one: Engine overhauls used to be made at 45,000 to 50,000 miles; a change in procedures doubled the interval to 90,000 to 95,000 miles—with some running as high as 125,000. See page 64.

Also in this Issue . . . .

How the public gets a real transportation story, pages 20 and 51 . . . What driver should tell the judge, page 56 . . . General Motors new high-output diesels, page 72 . . . Why small fleet wins seven safety awards, page 74.

World-famous *Texaco Marfak* is a tough, tenacious lubricant that *"stays put."* It won't jar out under the pounding of rough roads. It won't squeeze out under the weight of heavy loads. At the same time, *Texaco Marfak* seals out dirt, keeps rust-forming moisture off metal, guards against wear for extra hundreds of miles between applications. Count on *Texaco Marfak* to give you smoother operation, longer parts life, lower maintenance costs.

Protect wheel bearings with *Texaco Marfak Heavy Duty.* It seals out dirt and moisture . . . seals itself in. Greater braking safety, greater saving. No seasonal change necessary.

Protect your engines with *Texaco D-303 Motor Oil.* It's detergent-dispersive—cleans as it lubricates. Assures longer parts life, lower maintenance costs.

Let a Texaco Lubrication Engineer show you how effective lubrication will protect your investment, reduce your costs. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write The Texas Company, 135 E. 42nd St., New York 17, N.Y.

MARFAK

MORE THAN 400 MILLION POUNDS OF **MARFAK** HAVE BEEN SOLD!

Lubricants and Fuels

FOR THE TRUCKING INDUSTRY

CONFERENCE CORNER

PRESENTING THE EXPERTS' VIEWPOINTS ON TIMELY SUBJECTS OF INTEREST TO FLEETS

Subject: Road Failures

N. L. Parks, superintendent of maintenance, Dixie Highway Express, Inc., shows how his fleet cut road failures by one third and why they expect to drive 50,000 miles per "road hazard" this year.

We do not regard a road failure just as a road failure; we think of it as a "Road Hazard." In answer to your questions:

1. *What were your most common types of road failures prior to your attack of this problem?*

   Fuel and oil lines on our diesel powered equipment. On our Gasoline powered equipment the electrical system caused most of our road failures, both the ignition and wiring system.

2. *What rate of breakdown did you experience?*

   In 1948 and 1949 we averaged 21,116 miles per road failure.

3. *What specific changes did you make in maintenance routine, inspection, records or driving control to reduce this figure?*

   We started using Driver Breakdown Records showing the driver's name, place of road failure, number of hours of delay, who made repairs and explanation of road failure. This record also shows the tractor and trailer number involved in the failure.

   After analyzing driver break-down records for several weeks we found there were some drivers within the system who needed more education as far as the equipment was concerned. This was handled first, then, in order to eliminate our fuel and oil line failures on our Diesel powered equipment we completely replumbed each piece of equipment, using high pressure flexible lines instead of copper tubing and the original oil lines. This eliminated all of our road failures on Diesels caused by fuel and oil line trouble.

   On our gasoline powered equipment we discarded all small generators and started using heavy duty generators and regulators, and set up a more rigid PM program on all electrical systems. This helped considerably.

4. *What specifically are your results and what do you expect in the future?*

   In the year of 1950 we averaged 33,815 miles per road failure and by removing so called "grease boys" from our Inspection Pit and using first class mechanics as service and lubrication men we expect, in the year of 1951, to raise our 1950 figure to 50,000 miles per road failure.

5. *What factors above your control (such as design, assembly location, manufacturer's specifications) would you like to see improved in order to help such fleets as yourselves reduce the road failure rate?*

   We are all aware of the fact that most truck manufacturers are still using the same electrical system they were 15 years ago with little or no improvement. On trailers there certainly could be great improvement made in the wiring system. As you know all wires are on the inside of the van, therefore, it is practically impossible for a trailer to be loaded and unloaded continuously with freight without some of this freight getting against some of the wiring, causing light failures and, in turn, road failures, naturally this would be a fire hazard. This wiring could be improved considerably by being protected and placed on the outside of the trailer in such manner that it could be repaired without, in most cases, unloading half a load of freight.

   Furthermore, if truck and tractor manufacturers would start thinking of trucks and tractors as a work horse instead of trying to beautify them and make a lot of component parts more accessible to the mechanic we, in the trucking industry, would be greatly benefited. As an example, no driver can any longer install a fan belt.

   It takes a mechanic and three or four different tools, and approximately an hours time, to install a fan belt on some equipment that is now being manufactured.

   As another example, stop light switches on some tractor involve 1 to 1½ hours labor to remove and install because it is mounted up under the cab in the channel of the frame, and it could just as easily be installed behind the cab and be readily accessible to the mechanic.

At Your Service

By M. K. SIMKINS
Technical Editor, Commercial Car Journal

Main Bearing Adjustment

Chevrolet has suggested a method of main bearing adjustment for Powerglide equipped engines that might well be used in truck work, where it is often difficult to turn the engine over while adjusting the mains.

This simple method, using an ammeter, will provide for an accurate and uniform adjustment of shim-packed main bearings. With battery at peak specific gravity reading, connect an ammeter into the starting circuit and take cranking load. Remove a shim and recheck. If cranking load is the same, remove another shim and recheck. When the cranking load increases, replace the last shim to bring cranking load down to original reading. Repeat same procedure on all bearings.

Base amperage load must be established for each engine due to differences in draw caused by resistance, etc. This would appear to be an easy way to secure a precision adjustment, and certainly more reliable than attempting to "feel" the drag by hand.

Compressor Service Saves Tires

The relationship of tire inflation to tire life is pretty well recognized in the fleet field, but the *kind* of air that is put into that tube is sometimes not carefully considered. Have you checked your shop air compressor lately, to see that it is in good mechanical condition? Is it drained periodically?

Large amounts of water will collect in a day's time if it is used extensively, while oil leaking past worn rings or cylinders produces an emulsion that is forced out through the air lines. When it comes in contact with the valve core seals, the rubber may deteriorate and you develop a slow leak. It is possible for this oily emulsion to attack the rubber in the inner tube itself. The result is early tire failures.

Brake Drums and Dirt

Some operators are cutting peep holes in brake drums to expedite the inspection for lining condition and as an aid in adjusting some types of brakes. The time-saving advantages of this practice are questionable, but the harmful effects of opening up the foundation system to dust and dirt can wreak a large amount of damage. Far too often proper provision is not made for closing of this opening. It is true that the drums are not dust-proof, but any leakage at the opening between the mouth of the drum and the backing plate does permit an escape of the accumulations that do occur. And when you cut a "chimney," you are taking a chance of wearing out the linings prematurely. If you must do this, be sure to cut a door out of spring steel and screw the plate to the drum securely. Then see that mechanics always replace them.

Bone Up On Spray Painting Techniques

It isn't anyone who can repaint a truck body—and produce a quality job. Fleets spending good money for the most modern equipment require professional refinishing, for they know that a good paint job is one of the best protections to metal. To help solve the problem of training the new men who are being shunted into the industry, Binks Mfg. Co. of Chicago is reopening its spray painting school with one week courses covering methods, equipment servicing, troubleshooting and related subjects. Supervisors, managers and others interested in the subject are welcome. No tuition is charged.

A New Look at Brake Fluids

Some mechanics have a habit of blaming the brake fluids for conditions that actually can be caused by a number of things. For instance, a thickened fluid might appear to have lost its viscosity characteristics due to a chemical reaction within the fluid . . . but it must be remembered that chemical breakdown can occur through no fault of the fluid formula. Thus, a thickened fluid may be simply due to a solvent loss through leakage, or it may be caused by an old, diluted or contaminated fluid.

Sludge conditions sometimes noted in the wheel cylinders may be due to dirt, or water entering through poor seals at the cylinders or through carelessness during filling.

Swollen rubber cups sometimes result from use of a fluid containing a petroleum base, but more often they are caused from contamination introduced into the system through improper flushing procedures or by washing parts in a harmful solvent. It should be

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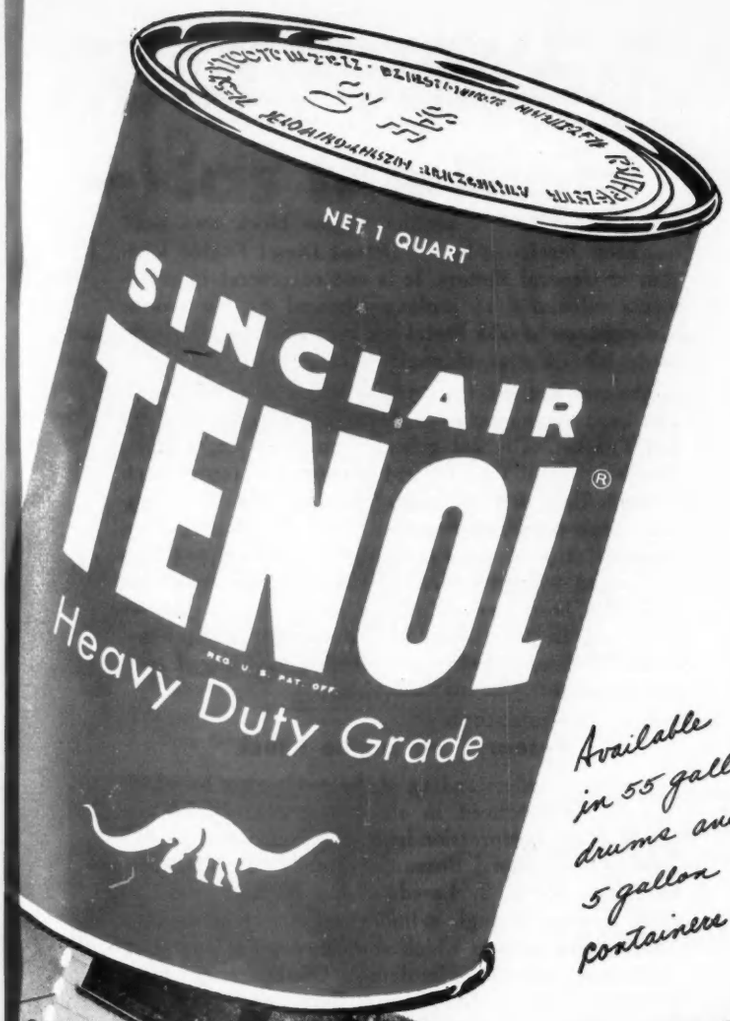
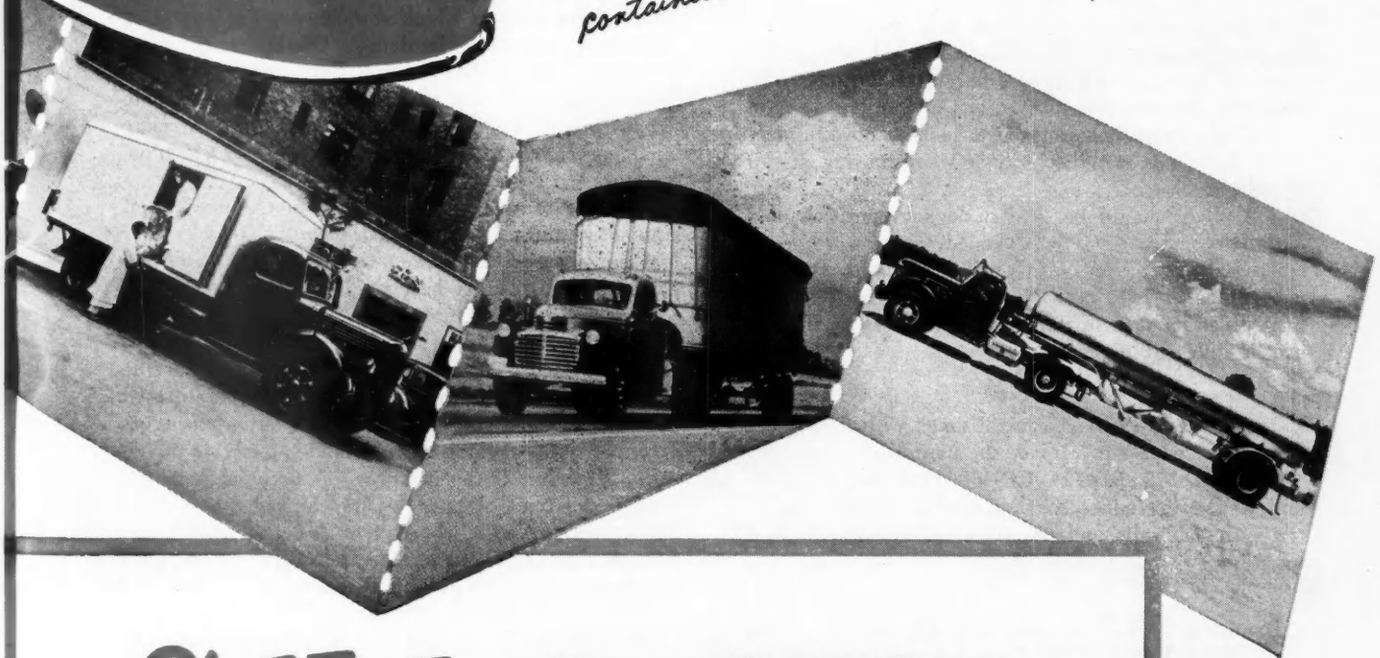


Available in 55 gallon drums and 5 gallon containers

For over 15 years . . . in all types of diesel and gasoline engines in rugged, heavy-duty service . . . Sinclair TENOL® has been doing an outstanding job. TENOL has *proven* it provides long periods of trouble-free operation at sustained high power output, with lowered upkeep costs.

Sinclair TENOL is not to be compared with many alleged "heavy-duty" oils. TENOL is the real thing! You can easily tell if an oil is actually "heavy-duty" . . . See if it is approved under new Military Specification MIL-0-2104. TENOL far surpasses this stringent Government standard!

Save your valuable equipment — phone your nearest Sinclair Representative or write direct to Sinclair Refining Company, 600 Fifth Ave., New York 20, N. Y.



SINCLAIR TENOL
prolongs engine life

At Your Service

Continued from Page 10

mentioned here that the washing of brake parts in containers used for oil or gasoline may contribute to early failures of rubber cups. Grease from dirty hands during the washing operation may also be a factor in cup swelling. And the use of kerosene when honing wheel cylinders should be frowned upon, as traces of oil left may enter the system and cause damage.

Corrosion and pitting of the wheel cylinders may appear to be a result of a poor brake fluid, but check for moisture in the system before blaming the fluid. Likewise scored wheel cylinders can be caused from moisture as well as rust and dirt. Varnishing of the pistons may be caused by excessive heat, but check for leakage past the seals, or contamination with dirt and moisture, before blaming an outside condition.

Factories Suggest . . . .

Ford has announced that the "NoSpin" differential, designed to provide positive traction under unfavorable road conditions, is being installed in production on special order on F-4, F-5, F-6 and F-7 trucks.

* * *

A special bulletin from Eaton Mfg. Co. emphasizes the correct handling of trucks equipped with Eaton Tandem Drive Axles with differential lockout. The company recommends that . . .

1. Control should be moved to lockout position only when vehicle is standing still or when moving at low speeds.
2. Control should be held in lockout position only as long as extra traction is needed.
3. Continuous unnecessary use of lockout must be avoided as it will result in excessive tire wear and may cause damage to the axles themselves when tires are of different diameters.

* * *

Thompson U-Flex oil control rings with a step cut or chamfer edge now replace the plain oil control ring on IHC RD-372, RD-406, RD-450, FBB-450, FBC-450, and RED-450 engines. Earlier seating of the rings to the cylinder walls and improved oil economy is said to result.

* * *

Dampener springs are now available for use on the front brake drums of the Plymouth passenger car. It is said that this coil spring secured to the outside of the brake drum will reduce the vibrating "wire brush" noise that is sometimes audible when stopping at slow speeds.

* * *

Ferric-alloy cam ground pistons are now used in Studebaker Economiser engines for Models 25R, 210R, and 2R15 to assist in preventing piston scuffing and cylinder wall scoring.

A .0015 feeler one inch wide should be used to fit the pistons to a 15-20 lb pull. If a .002 feeler is used, fit to a 20-25 lb pull. Piston pins should be fitted to .0004 clearance at room temperature, or until the piston pin will just drop through the bushings by its own weight—without oil, according to Studebaker.

GM Diesel Seal

A new method of sealing engine block and head has been developed by the Detroit Diesel Engine Division of General Motors. It is one of several improvements calculated to prolong life and further reduce maintenance of GM Diesel engines, according to L. S. Sheldrick, director of engineering.

The new method, featuring a "metal to metal" block and head arrangement, replaces the ordinary cylinder head gasket. To seal cylinder compression, a compressable metal ring is used between the top of each cylinder liner and the head. This ring effectively confines high pressures resulting from the 16 to 1 compression ratio of the engine. Water and oil passages are sealed with individual synthetic rubber seals that look like hose washers. These seals fit into grooves machined in the block and are tightly compressed when the head is bolted on, forming an efficient sealing device.

Research on Engine Knock

Increased understanding of the mechanism by which "knock" is produced in automotive engines has resulted from compression-ignition studies now under way at the National Bureau of Standards. This work, conducted by W. J. Levedahl and F. L. Howard of NBS, employs a single-cylinder test engine of variable compression ratio in which a wide range of operating conditions may be simulated. Oscillograph traces showing pressure changes and light emission during combustion in the test engine provide an insight into the nature of knock and can be used to correlate knocking characteristics of fuels with their chemical structure.

With the present rapid increase in the number of automotive units in use in this country, problems of fuel conservation are becoming more and more important. Probably the best single way to reduce fuel consumption in the automotive engine is to increase its compression ratio, which means in effect increasing the pressure at which the fuel is burned in the combustion chamber. This raises the temperature of combustion and hence raises the amount of heat energy per unit of fuel that is made available to do work. However, if the compression ratio is increased beyond the limit allowed by the fuel, detonation, or knock, occurs, with consequent loss in power and possible damage to the engine. Although this problem has been recognized for many years, it is still only partially understood.

Investigators have found that in normal, nonknocking combustion the flame initiated at the spark plug travels evenly across the combustion chamber, generating pressure which pushes the piston down. In knocking combustion the flame progresses for a time in the same way, burning most of the charge evenly. Ultimately, however, some of the unburned charge, known as the "end gas," is compressed to a high pressure which causes it to ignite spontaneously (autoignite) and to burn with explosive violence. The sudden release of energy acts as a hammer blow on the piston, rather than a gradual push, and a shock wave

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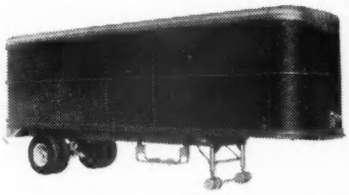
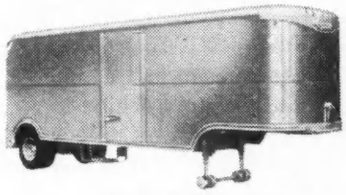
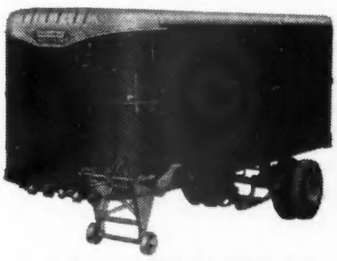
TRAILMOBILE BUILDS A FULL LINE
—Has the Right Trailer for the Job



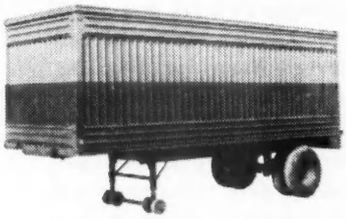
All Steel Dry Freight Van



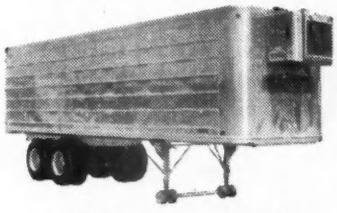
Drop Frame Van



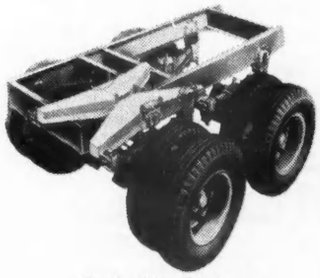
Complete Automatic Coupler Van



Corrugated City Delivery Van



Aluminum Refrigerator Van

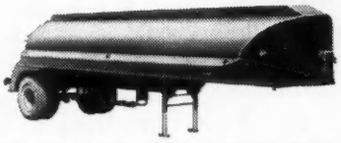


Trailmobile Tandem—
Only two Moving Parts

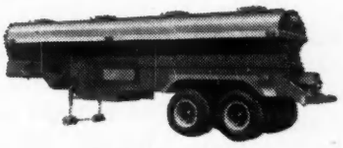
It takes a wide variety and many types of trailer to satisfy the specialized needs of the Trucking Industry.

Trailmobile builds a full line of trailers, designed to earn a profit for the operator—with a minimum of service. Pictured here are a few of the models and types available for prompt delivery.

Without obligation—call the convenient, friendly Trailmobile branch near you for recommendation or assistance on any hauling problem. These men are dedicated to your service.



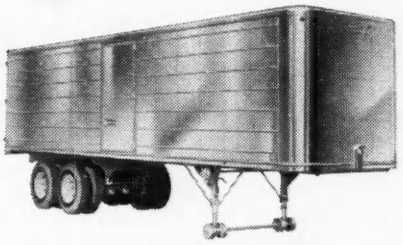
Tank Trailers for Liquids of All Kinds



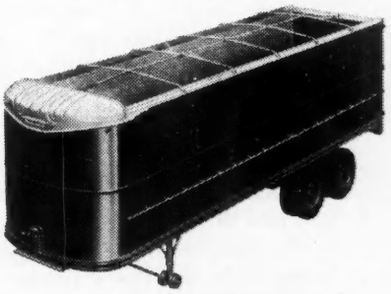
Bulk Cement Trailer

Platform Trailer

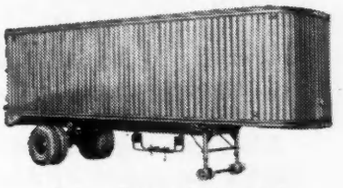
Four-Wheel Platform Trailer



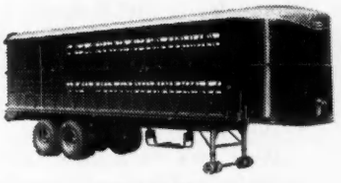
Aluminum Dry Freight Van



Open Top Van



Corrugated Dry Freight Van



Deluxe Cattle Rack

Lightweight Grain Rack

Drop-Frame Interchangeable
Chassis for Special Body Types

THE TREND IS TO
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from Coast to Coast

The OVERLOAD

EDITORIAL COMMENT

A Lesson in Transportation at Grass Root Levels

IT WAS a hot summer in Pennsylvania, for more reasons than one. The weather was only part of it. The rest involved the fight over the state's Fair Truck Bill, designed to increase gross loadings to a scientific and reasonable minimum. Everybody got into the act.

At lunch with the office gang, at the old swimming hole, in the Pullman smoker (perish the thought), or at milady's tea—wherever people gathered and whenever anyone connected with the truck industry showed up—the fight was on. At this writing the battle is undecided. But the plain, sad, simple truth is that *most people* don't like trucks.

It's a long way from Pennsylvania to California. But for the purpose of this discussion the two are closely related. In Los Angeles they have a new gimmick—a full-fledged transportation show in miniature (see Page 51). In words and animated models, it tells the transporation story to the *public;* points out what each phase of transportation means to the state's economy.

Now let's do a little supposin'. Suppose similar exhibits had been telling the story to the public in Pennsylvania for many years; keeping abreast, of course, of changing times. Suppose each succeeding class of school kids had been taken to see it, gone back as adults to bring their impressions up-to-date, grown up with the idea that each form of transportation had its own vital part to play. Might it not have been less difficult to convince the public that the Fair Truck Bill *was in the public interest;* not for special interests?

Oh yes, it takes a great deal of supposin'. The sad truth is that even in California not many truck and bus fleet operators realize what they have. We had to chug all over hell's green acres to find it, and go a lot deeper than that to find the story behind it. But it seems to us that we can write that off to lack of vision on the part of transportation interests and a very great lack of that old and powerful American weapon—publicity.

But at least one man had vision and foresight strong enough to conceive the exhibit and, perhaps even more important, the push to raise the necessary funds; which as a last resort, was in the form of a loan to be repaid from a 10-cent admission charge. And at least one fleet operator had the vision to underwrite a very substantial number of admissions for school children.

Exactly two years ago, we campaigned on this very page for a transportation fair on the order of the railroad pageant in Chicago in 1948 and 1949. We still think the idea should be considered and we're encouraged to note the American Trucking Assns. is considering a move in that direction in connection with the 1952 National Roadeo.

In the meantime, fleetmen everywhere could devote some profitable thinking and planning along the lines of the transport exhibit at Los Angeles. It's a going concern; one that could be duplicated or bettered in every sizable community and at little or no cost. Best of all, such exhibits could tell the transportation story to the public fairly and accurately without the handicap of originating from any special interest group.

Let's not lose sight of one vital truth. Legislators are people themselves and they represent many more people. It's a whole lot easier to sell an idea to a legislator back home in his own community, than on the steps of Capitol hill.

Bart Rawson
Editor

CCJ REPORTS

on News of the Industry

New Yorkers to Test Tax

The constitutionality of the new ton-mile tax in New York will be tested by legal process, according to a recent announcement made by the Motor Carrier Association of New York. Final details of the legal process are now under way.

The exact grounds on which the tax measure will be attacked have not been stated, but attorneys have already been appointed to take the measure into court. Comprising a legal advisory group are: Herbert Burstein, counsel for the Motor Carrier Assn. Sidney Cohn, counsel for Locals 807 and 707 of the Teamsters' Union, and Harris Klein, counsel for a group of truck operators.

Truckmen Praised for Flood Relief Activity

With railroad beds and rights of way made helpless by the recent floods in the Kansas City area, the mobility of the trucking industry was more than proven. Their terminal facilities were badly damaged, and in many cases useless.

The stories of hard work, long hours behind the wheel, and outright heroism are legion. The principal job of emergency transportation was needed and was done in this commendable and unselfish spirit.

Relief officials of the area were unanimous in their praise of the work which the trucking industry had done to relieve the emergency in food and other necessities. To quote one, George G. Mears, disaster relief chairman of the Kansas City chapter of the American Red Cross, said, "They came across swell. . . . We would put out a call for 40 or 50 trucks and the industry would send 70 or 80."

Penna. Truck Bill Near

At press time Pennsylvania's "Fair Truck Bill" was well on the way to final enactment but still not "in the bag." It had passed the Senate by a vote of 31 to 18 and the House by 113 to 79. But the House had inserted minor amendments that had to be cleared by the Senate before submission to the Governor. On Aug. 21 the legislature recessed until Sept. 17 with a joint agreement between houses that no controversial issues would be cleared until after the recess.

The principal feature of the bill will up gross vehicle ratings for tractor-trailer combinations from 45,000 lb. to 60,000 lb. giving recognition for the first time to tandem-axle trailers. It will also permit 48,000 lb on single axle trailers. It retains the gvw of 62,000 lb on full trailer combinations and also retains the state's 20,000 lb axle load. Tandems would be permitted 36,000 lb.

(TURN TO PAGE 140, PLEASE)

DATES and DOINGS

SEPT. 12-14—National Assn. of Motor Bus Operators 21st Annual Meeting, Drake Hotel, Chicago, Ill.

SEPT. 13-14—American Society of Traffic & Transportation, Inc., First Annual Conference & Seminar, Northwestern University, Evanston, Ill.

SEPT. 13-14—Tennessee Motor Transport Assn. Annual Convention, Chattanooga, Tenn.

SEPT. 13-15—Virginia Highway Users Assn., Annual Convention, The Greenbrier, White Sulphur Springs, W. Va.

SEPT. 14-15—Indiana Motor Truck Assn. Annual Convention, The French Lick Springs Hotel, French Lick, Indiana.

SEPT. 17-18—Michigan Trucking Assn. Annual Convention, Grand Hotel, Mackinac Island, Mich.

SEPT. 17-21—Fleet Supervisor Training Course, Ohio State, Columbus, Ohio

SEPT. 17-21—Industrial Safety Institute, Penn State Campus, State College, Pa.

SEPT. 18—Massachusetts Motor Truck Assn. Annual Convention, New Ocean House, Swampscott, Mass.

SEPT. 20-22—Idaho Motor Transport Assn. Annual Convention, Lewis & Clark Hotel, Lewiston, Idaho

SEPT. 21-22—West Virginia Motor Truck Assn. Annual Convention, Daniel Boone Hotel, Charleston, W. Va.

SEPT. 24-26—Annual Convention and Supplier's Exhibit of National Truck Body Manufacturers and Distributors Assn.; Haddon Hall, Atlantic City, N. J.

SEPT. 24-28—Fleet Supervisors Training Course, University of Kansas (Ext.) Wichita, Kansas.

SEPT. 24-28—Fleet Supervisors Training Course, Purdue University, Lafayette, Indiana.

SEPT. 25—Motor Transport Assn. of Connecticut Annual Convention, Hotel Bond, Hartford, Conn.

SEPT. 29-30—Kansas Motor Carriers Assn. Annual Convention, Town House Hotel, Kansas City, Kans.

OCT. 1-2—North Carolina Motor Carriers Assn. Annual Convention, Carolina Hotel, Pinehurst, N. C.

OCT. 1-4—American Transit Assn. Annual Meeting, Cincinnati, Ohio, Hotel Netherlands Plaza.

OCT. 1-5—Fleet Supervisors Training Course, University of Minnesota, Minneapolis, Minn.

OCT. 6—Nevada Motor Transport Assn. Annual Convention, Chamber of Commerce Rooms, State Building, Reno, Nevada.

OCT. 8-12—National Safety Congress and Exposition: industrial safety at Stevens Hotel, Palmer House, Congress Hotel, Morrison Hotel; traffic safety at Congress Hotel; commercial vehicle safety at LaSalle Hotel, all in Chicago, Ill.

OCT. 22-27—American Trucking Assns. Annual Convention, Stevens Hotel, Chicago, Ill.

OCT. 29-30—Society of Automotive Engineers Diesel Engine Meeting, Drake Hotel, Chicago, Ill.

OCT. 29-31—Society of Automotive Engineers Transportation Meeting, Knickerbocker Hotel, Chicago, Ill.

OCT. 31-NOV. 1—Society of Automotive Engineers Fuels & Lubricants Meeting, Drake Hotel, Chicago, Ill.

NOV. 1-2—Arkansas Bus and Truck Assn. 18th Annual Convention, Hotel Marion, Little Rock, Ark.

NOV. 5-9—Fleet Supervisor and Management Training Course, University of Virginia, Charlottesville, Va., Dean J. N. G. Finley, director.

NOV. 7-9—American Society of Body Engineers 6th Annual Technical Convention Rackham Memorial Bldg., 100 Farnsworth Ave., Detroit, Mich.

NOV. 8-10—Montana Motor Transport Assn. Annual Convention, Finlen Hotel, Butte, Mont.

NOV. 15-16—Fleet Supervisor and Management Training Course, University of Tennessee, Knoxville, Tenn., Prof. Wm. Way, Jr., director.

DEC. 2-3—Missouri Bus and Truck Assn. Annual Convention, Hotel Governor, Jefferson City, Mo.

DEC. 5-7—Motor and Equipment Wholesalers Assn. Annual Convention, Stevens Hotel, Chicago, Ill.

1952

JAN. 24-26—Motor Truck Assn. of So. California and Truck Owners Assn. of California Joint Convention, Coronado Hotel, Coronado, Calif.

One Ring does All 3...

unique Spiro-Seal's AUTOMATIC ADJUSTMENT ACTION insures just-right wall contact in every cylinder! That's why oil and blow-by are controlled while at the same time:

Ramco 10-Up Heavy-Duty Piston Rings are especially designed for Fleet Installations . . . Re-Ring or Re-Bore!

RAMCO 10 up ACTUALLY CURBS WEAR

No need to worry about right pressures with Ramco 10-Up . . . Spiro-Seal, the patented Ramco continuous steel ring takes care of that . . . automatically. See how *resistance increases* as you compress Spiro-Seal. In a taper-free Re-Bored or new cylinder the wall pressures approximate those of new engine rings. However, as you compress the ring, note how the resistance increases, just as it does when cylinder taper increases. Thus where wear requires greater wa contact, Ramco 10-Up Spiro-Seal su plies it automatically, without ne or assistance from the inner-rin This freedom from reliance on hi inner-ring pressures, is one of ma reasons why Ramco's stabilizing a tion actually curbs further wea

Send for latest Catalog of Ramco Heavy-Duty Piston Rings!

RAMSEY CORPORATION
St. Louis, Missouri

CCJ REPORTS

DETROIT DISPATCH

by LEN WESTRATE Detroit News Editor

Chevrolets and GMCs up $32 to $68

Chevrolet and GMC have increased prices of trucks, completing the latest cycle of price adjustments by all major manufacturers. Chevrolet has upped price tags by an average of about 3 per cent under ceiling price Regulation 30. Increases ranged from $32 to $68. GMC has advanced its prices about 3½ per cent on its entire line of models.

Previously, Ford and Dodge had raised prices, while International made reductions. However, the latter company had increased its prices very early this year.

It does not seem likely that the new Defense Production Act will result in any further price increases of any consequence on trucks since most companies had taken advantage of cost increase adjustments permitted under Regulation 30.

Material Shortages Worsening

Truck builders are finding that CMP tickets for materials are not certified cashiers checks but are more of a hunting license. This is particularly true when applied to the most critical materials such as copper and alloy steel. Production already has been hit by a shortage of axles, transmissions, and wheel steel and there is some doubt that some companies, and perhaps the industry as a whole, will be able to build the 275,000 units permitted this quarter.

If that production is made, it will be because of inventories of material carried over from the second quarter.

The fourth quarter quota for the industry is 256,000 trucks consisting of 139,637 lights, 83,780 mediums, and 32,583 heavies. It is understood that this does not include trucks sold for military use, for which additional materials will be allotted. The industry believes that if CMP breaks down badly enough to threaten truck production greatly, special directives will be issued for materials.

Truck Sales Picking Up

Truck sales traditionally have followed business conditions in the trucking industry. Factory sales officials say that the sales trend is starting to indicate that trucking business, which had fallen off about 15 to 20 per cent during the past 60 to 90 days, is apparently picking up again. They are convinced that as the defense program starts to take hold this fall, business will increase for the haulers and strengthen the demand for new trucks.

Octane Change Small

Although octane ratings of both regular and pre mium gasoline have dropped slightly in the past three months, the reduction is very small, ranging from 1 to 1½ octane numbers, the latest survey by Ethyl Corporation discloses.

It is very difficult to predict the future course of octane ratings, but one guess is that if more strict lead allocations are imposed, a limit may be set on the upper octane ratings that refiners can produce. Currently, total lead usage is under allocation with refiners having the option as to the quality of fuel produced.

Tetraethyl fluid is being stockpiled by the government against military emergency.

Octane ratings have not dropped enough yet to be a problem for high compression passenger car engines and no difficulty is expected with truck engines, which are more tolerant of lower octane; unless some emergency requires the rating to be lowered considerably below what it is now or what is expected.

Truck Supply Good for Rest of Year

Even though truck production in the months ahead faces some rough going, no shortage of trucks is expected during the balance of this year. Field inventories are expected to be adequate, together with whatever production the industry can make, to meet the demand for new trucks.

. . . And Parts Supplies Holding UP

Although the status of replacement parts is not quite as firm as it appeared a month ago, it still is believed that there will be no appreciable shortage. Service parts are included under CMP, but because that program is so badly muddled, manufacturers may have some difficulty finding enough materials. However, as is the case with trucks, the industry believes that special action will be taken to insure materials for an adequate supply if CMP fails.

. . . With Tire Outlook Cheerful

The brief truck tire shortage apparently is well in hand and manufacturers expect a surplus by the end of this year. Dealer's inventories are building up and they are expected to be high by November or December.

It is believed that there will be no formal price reduction on tires because of higher labor costs brought

(TURN TO PAGE 160, PLEASE)

Which lamp is ready to burn out?

ONE of the General Electric "All-Glass" headlamps on the test car above has just been lighted for the first time. It's at the beginning of its life. The other G-E lamp . . . the one on the left . . . has been burning day and night for many, many months. Yet when the photo was taken it was impossible to see any difference in the light output of these 2 lamps!

That's because General Electric "All-Glass" headlamps give an average of 99% as much light just before burning out as when new. Both the lens and reflector of the G-E headlamp are made of hard glass, fused together into one piece. Road and laboratory tests prove that this one-piece unit keeps out the dirt and moisture that might otherwise gradually rob the lamp of light output.

Because they DO NOT GROW DIM, G-E "All-Glass" headlamps mean easier, SAFER night driving. Use them to replace burnouts during the summer driving months! Ask your supplier about General Electric "All-Glass" headlamps today!

G-E "All-Glass" Headlamps DO NOT GROW DIM!

GENERAL ELECTRIC

CCJ REPORTS

WASHINGTON RUNAROUND

by KARL RANNELLS Washington Correspondent

Defense Cargo Boom Soon to Zoom

Transportation of defense materiel, so far, has amounted to little more than a drop in the bucket, compared with things to come. A major reason for the slow and spotty boom lies in the fact that, usually, from five to 10 months must pass between the signing of a contract and the rolling out of finished goods.

But transportation firms, not already geared to do so, should get ready to meet increasing tonnage demands. Pick-up in volume already has started. It will reach a high point in late 1952, according to best estimates now by key military and other government officials. Freight movement during 1953 may reach World War II proportions, they say.

Military officials have asked Congress for approximately $60 billion for defense spending over the 12 months ending June 30, next; which will be trimmed less than $5 billion, in the end. This will mean that, for the current fiscal year, defense spending will continue at its present rate of $1 billion a week. Deliveries are now a third of the contracting rate but are expected to match the spending rate in the next few months.

. . . But Some Civilian Shipments Will Sag

All steel, copper and aluminum production has been put under complete allocation through the DPA's. However, this does not mean that defense plants and producers of "essential" goods, such as trucks, will get more of the controlled materials. . . . Or all that they need.

But on paper, at least, it does mean that most manufacturers of consumer durables, and other goods using the three metals, will get some of what's left over from defense use. DPA says this share will be "fair."

But, more important to carriers, it also means that over the next year, at least, manufacturers of goods using these three metals will be held down to about 60-65 per cent of 1950 production. The net result is a third less goods for shipment from these sources. Use of substitute materials, where possible, could raise output slightly.

Truck Production Due To Slide . . .

Odds are against last quarter truck production being maintained at the 256,000 level set by NPA. The major reason is that fourth quarter material allocations could not be gotten out in time for all orders to get on October mill schedules. Of course, an advance allotment of 70 per cent had been sent out with third quarter allocations but manufacturers were warned not to place orders for more than a third of the total for any one month.

In addition, present regulations forbid use of excess inventories to produce additional vehicles and, like other industries, unused allocations must be returned to NPA at the end of the quarter and cannot be carried over.

Meantime, the NPA was getting ready to issue a new order which would require t ick manufacturers to report their truck sales—new and used—to the agency. This information would not be made public, NPA said, but is necessary to help work out proper materials allocations for truck-making. What the agency did not say was that these reports would help the agency keep a check on whether manufacturers are dipping into their excess inventories.

. . . And Materials Allotments to be Cut

All motor vehicle manufacturers, including trucks and trailers, are faced with materials cuts during the last quarter. And this may carry over into the first quarter 1952. This is indicated by the fact that the freight car program has already been trimmed.

Manufacturers of passenger cars, who had been permitted to produce vehicles during the third quarter at a rate of 1,200,000 units will be limited still further with a ceiling quota of 1,100,000 vehicles.

Truck production will be cut back by 7 per cent to 256,000 units. This will permit last quarter production of about 32,600 heavies, 83,800 mediums, and 139,600 light trucks. Out of these totals will have to come the trucking needs of the armed forces.

Indications are that last quarter truck-trailer production would be permitted at the rate of about 16,000 units of all kinds. While the industry will be required to observe the unit ceiling, there will be no restriction on the types which are made.

Shortages Will Hit Railroads

Shortages of freight cars will continue over the foreseeable future, officials gloomily admit. Already running behind the planned schedule of 10,000 new cars a month—for various reasons including parts and material shortages as well as strikes—DPA officials now say that fourth quarter allocations of controlled materials had to be cut.

This means that the outlook for first quarter production of new freight cars will probably be held to not more than 24,500 freight and 2500 tank cars—even if no roadblocks or bottlenecks show up during the first three months of 1952. Planned production

(TURN TO PAGE 164, PLEASE)


Fire Bureau Answered
BURNING AUTO BRINGS FIREMEN
Faulty Wiring Causes Blaze in Automobile
Fire Thursday night severely damaged a new automobile owned by Mrs. [redacted] who just moved to [redacted] City Thursday.
Mrs. [redacted] noticed the fire about 9 p. m., as she drove up in front of the [redacted] home, 418 Fifth avenue.
[redacted] City firemen were called to extinguish the blaze in the [redacted] which badly damaged the carburator, radiator, panel, and motor wiring. A tire also exploded from the heat of the fire.
A former resident here, Mrs. [redacted] moved to [redacted] City Thursday from [redacted] after her husband left for the navy. Firemen attributed the fire in her car to faulty wiring.
Blaze Destroys Auto, Garage
A blaze, apparently started by a short circuit, destroyed an automobile parked in a garage at the rear of the home of [redacted] Park, [redacted] Westview rd., [redacted]
Fire Destroys Cab of Truck Passing Thru
A short circuit in the wiring of an auto truck parked in front of the home of [redacted] Railroad street, sent the fire department to the scene at 4:10 a. m., Tuesday. A small blaze was quickly extinguished. Damage to the truck was estimated at $15, firemen reported.
Light Wire Short Destroys Automobile
Shorted Wire Causes Fire Damage to Car
A car belonging to [redacted] of 2913 [redacted] caught fire at the corner of [redacted] Saturday at 1:45 p.m.
A shorted wire apparently caused the fire, firemen said. The estimated damage between $100 and $150.
Chief known causes of fires in 1950 —Automobile short-circuits, 647; cigarets and matches, 609; children playing with fire, 540; oil burners, 486; neglected kitchen ranges, 483; burning rubbish, 299; electric motors, 247, and defective wiring in buildings, 233.
Neglected Wires do cause FIRES ...lots of them!
Every day, hundreds of papers all over the country headline fires that destroyed cars, trucks, or buses *because of defective wires!*
The Fire Report for the City of Philadelphia shows that the "chief known cause of fires in 1950" was automobile short circuits.
When you finance *any* motor vehicle, you can't drive it away until it has been protected by fire insurance!
Defective wires are the worst fire hazard in motor vehicles. So, check the wire on *every* unit *regularly*. When insulation is cracked or worn, or conductors corroded, install Crescent Wiry Joe ignition wires and battery cables *immediately*. They eliminate fire hazards . . . improve engine performance.
CRESCENT Wiry Joe IGNITION CABLE SET
THE CRESCENT COMPANY, INC., Pawtucket, R. I.
Check the wire and cable on every car!

The shop grease monkey had been drafted into the army. Four months later his parents, good solid Tennessee mountain folk, received a letter from him at his camp in Texas.

"Oh, Paw," his mother said. "Our Daniel allus wuz sech a good hearted boy. Do you know what he says in the letter thet he's doin' now?"

"No, what?"

"He's supportin' two little Indian boys."

"What'd he say about hit?"

"He says, 'Please, Maw, send me fifty dollars at once. All my money has gone to Snake Eyes and Little Joe.'"

CCJ

The harassed Shop Foreman, perpetually in a financially jam, was trying to explain to his demanding wife that he just couldn't give her a check.

"It would only be sent back by the bank, dear," he pointed out. "My account is already overdrawn."

"Well, give me one anyway," she insisted, "and make it for $500. All I want is to pull it out of my handbag with my handkerchief at our canasta party this afternoon."

CCJ

Weavin' Willie, our city driver, says that when it comes to spreading the news, the female of the species is more dependable than the mail.

CCJ

It was a beautiful spring night. The truck mechanic had taken his girl for a spin out the highway and conveniently ran out of gas. A little squeeze and she fell with a light sigh into his arms. Her head tilted backwards and their lips met. She turned her head slowly, then spoke softly, "You understand, don't you, that I've never done a thing like this before?"

"My!" the truck mechanic marveled. "You certainly inherited a lot of talent."

CCJ

Leadfoot Louie, our company's gift to the women, says he's discovered a wonderful new drink, black whiskey. It's called pitchblende and one drink will give you enough courage to pinch-blonde.

The Maintenance Superintendent's little girl came running into the house crying, "Mother, daddy's lying on the porch, I think he's unconscious. He is holding a paper in his hand and there's a round box beside him."

"Oh that's wonderful," answered the mother, "my new hat has come."

CCJ

Safety Sadie: "What did they call shotgun weddings before firearms were invented?"

Catty Cora: "They were beau and error affairs."

CCJ

The Shop Foreman had been out on the town with some of the boys. It was 3:20 A.M. when he quietly let himself in the door of his home. Shoeless, he climbed the stairs, and entered his room without being detected. Just as he was about to get into bed his wife, half aroused from slumber, turned and sleepily said: "Is that you, Fido?"

Boastingly, he told the rest of the story to his cronies next day. "For once in my life I had presence of mind. I licked her hand."

CCJ

Doctor to Truck Mechanic: "My good man, I'd suggest you lay off drinking, just for the sake of your wife and kidneys!"

Truck Dispatcher: "Boy, you sure look like you're down in the dumps this morning. What's wrong? Did they give you a slow rolled on your return trip?"

Truck Driver: "Everything's wrong! I went through a red light last night, and before it was over, it cost me $400. Almost lost my driver's license and they threatened to give me thirty days in jail to boot."

T.D.: "Gosh, that trial justice and his court are awful strict, but I didn't know they'd throw that much at a fellow, just for going through one little red light!"

Truck Driver: "They don't; but this wasn't any ordinary red light that I went through."

Truck Dispatcher: "What kind was it!"

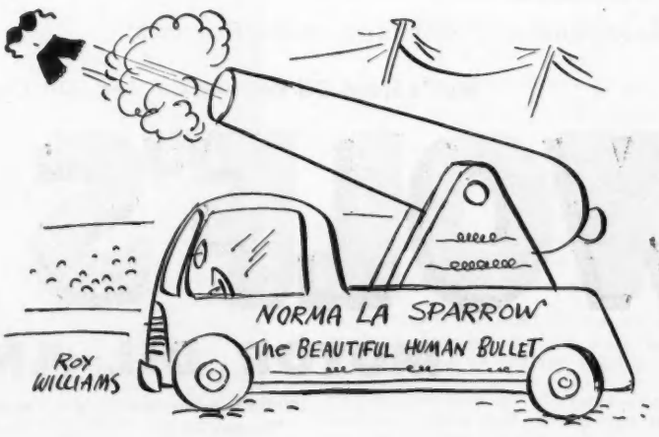
Truck Driver: "A tail light on a highway patrolman's car."

CCJ

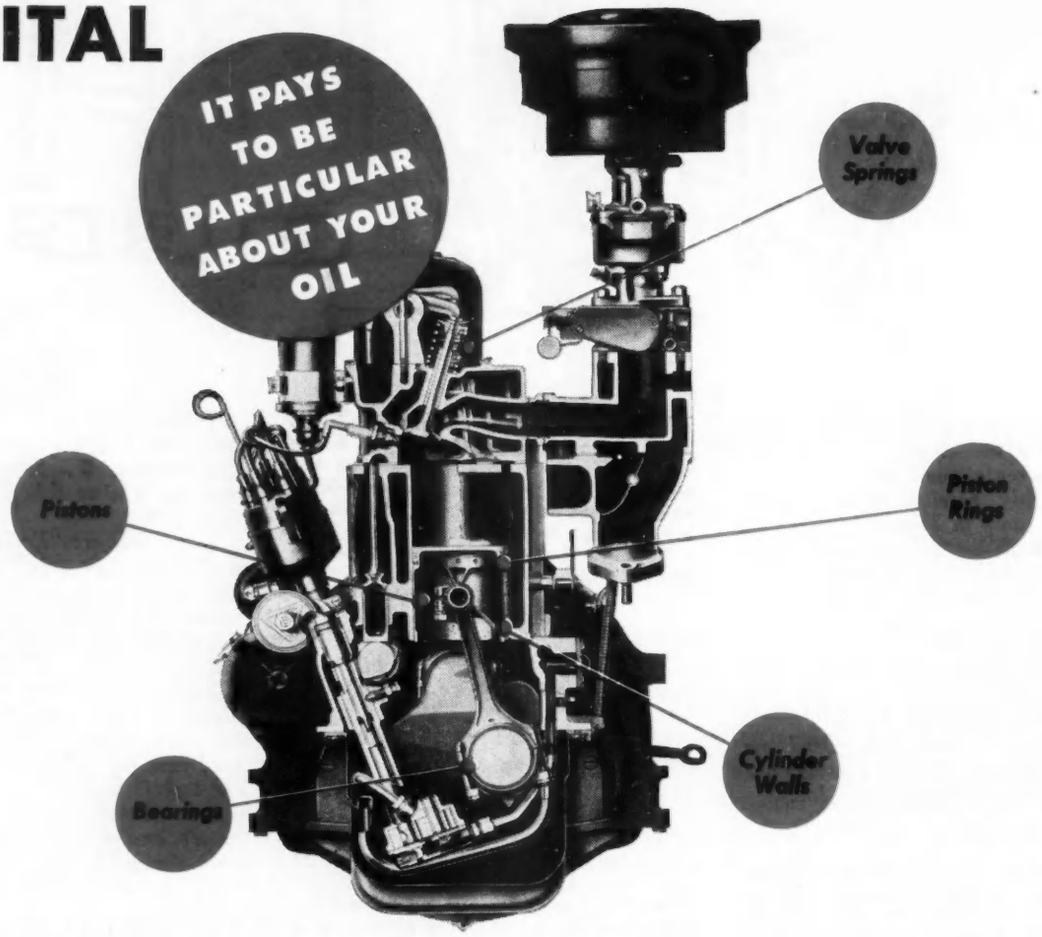
Two utterly dejected looking freight handlers were draped over adjoining stools at Joe's bar and grill. After the third drink, one turned to the other and snorted: "Hazel's the most despicable, overbearing, unattractive, sloppy hag I ever knew!"

"Yeah, I know," sympathized the other; "I can't get a date with her, either."

Resume Work



WHERE PROTECTION IS VITAL



IN EVERY vehicle of your fleet, over 300 engine parts depend *entirely* upon a microscopic film of oil for protection against excessive wear, corrosive acids, heat, friction, sludge and varnish deposits. Where protection is vital, you can't be *too* particular about your oil!

THE WOLF'S HEAD PLAN...*superior lubrication and sound maintenance practices . . . will* help you increase the life of your vehicles and reduce your operating and maintenance costs.

WOLF'S HEAD MOTOR OIL—100% Pure Pennsylvania, "Premium Grade"—gives *extra* protection. Its rich, tough, full-bodied film is highly resistant to corrosion, oxidation, sludging—holds oil consumption and engine wear to a minimum.

WOLF'S HEAD HEAVY DUTY MOTOR OIL—100% Pure Pennsylvania—meets *every* requirement for severe, heavy duty service; strong, tough film—excellent detergency—unexcelled dispersancy—superior stability—maximum resistance to oxidation.

WOLF'S HEAD LABORATORY CONTROL SERVICE PLAN, available to you at no charge, helps establish correct drain periods, sound maintenance practices and efficient operating schedules for each vehicle.

Free!... "Rules-of-the-Road" Folder with traffic rules, speed laws, driving information for all states. Give them to your drivers. Write for your copies.

Wolf's Head Oil Refining Co., Inc., Oil City, Pa., New York 10, N. Y.

WOLF'S HEAD

MOTOR OIL AND LUBES

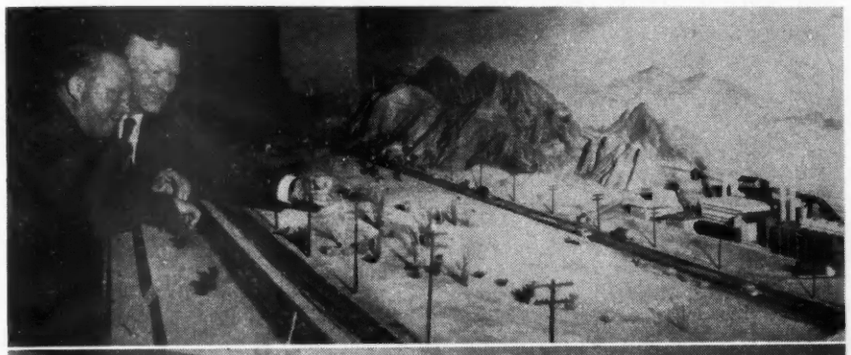
100% Pure Pennsylvania "Premium Grade"

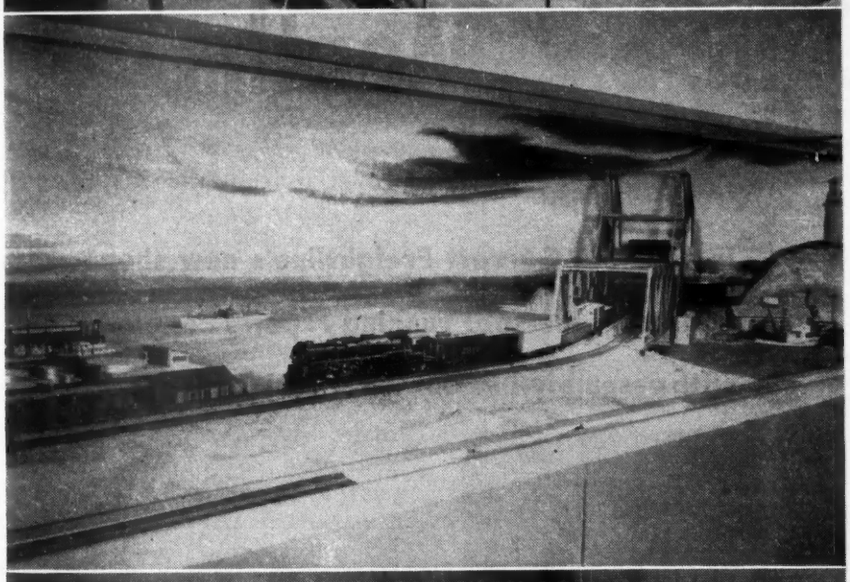
Member, Penna. Grade Crude Oil Association

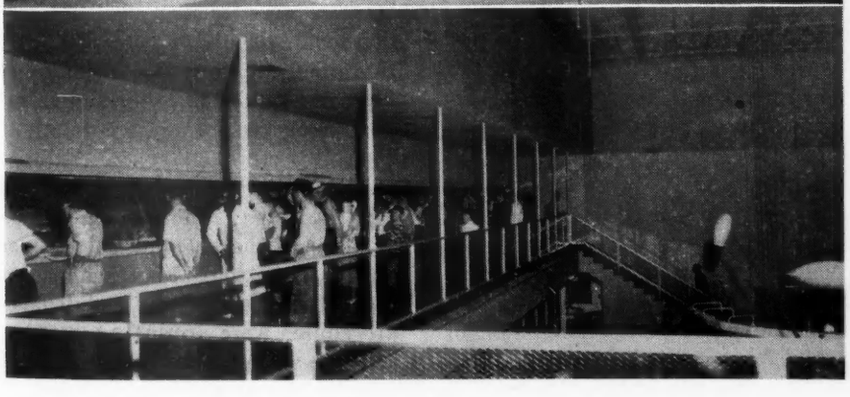
Animated scale-model exhibit shows vital role played by all forms of transportation in economy of state

CCJ FEATURE SECTION

California Tells the Public a Transportation Story







RESIDENTS AND VISITORS in Los Angeles have a real opportunity to better understand the vital role played by all forms of transportation. A unique transportation exhibit has been incorporated as a permanent feature at the Museum of Applied Arts and Sciences, Exposition Park, Los Angeles.

The purpose of the exhibit, as defined by its founders, is to present a graphic and powerful picture of the critical inter-relationship and interdependency between various forms of transportation and the economy of the state.

The manager of the museum, Louis C. Venator, conceived the idea of a miniature panorama which would show the importance of transportation in modern economy. He believed in its value as an educational medium. In presenting his ideas to various transportation groups, the response was cool. However, some agencies including the Motor Truck Association of Southern California, made some suggestions regarding the exhibit.

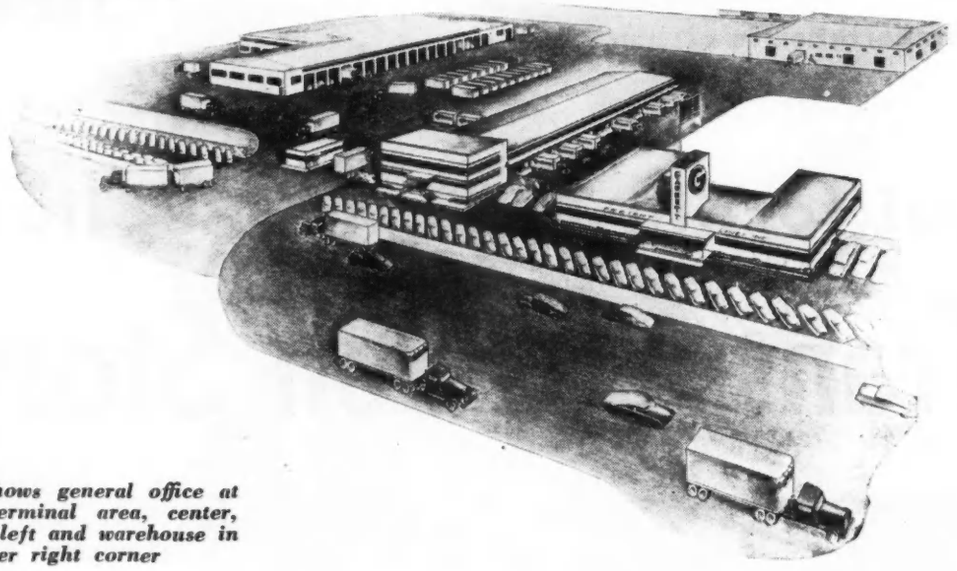
The major problem was the financing of the project. To house the

(TURN TO PAGE 121, PLEASE)

Top: Harry Oederkerk (left) exhibit builder discusses highway section with L. A. truck owner, C. Don Field

Center: Scale model steam locomotive pulls a line of freight cars through area devoted to marine transportation

Below. Visitors of all ages enjoy the moving trains and cars which wind in and out of the show's 10 departments



Master plan shows general office at lower right, terminal area, center, shop at upper left and warehouse in the upper right corner

Super Shop Cuts Costs

$5000 in Six Months

In addition Garrett Freightline's new shop boasts on-the-spot running repairs coupled with assembly-line unit overhaul techniques

RECENTLY it was our privilege, in conjunction with a special COMMERCIAL CAR JOURNAL correspondent team, to visit the new $800,000 headquarters terminal of Garrett Freightlines, Inc., at Pocatello, Idaho.

We wish that space permitted a full description of all the facilities including the air-conditioned general office with IBM billing and records equipment, the 80 x 320-ft terminal building with its own agency offices, the 20,000-ft warehouse with its own railroad siding, and the axle scale over which every Garrett vehicle must pass at the beginning of every trip.

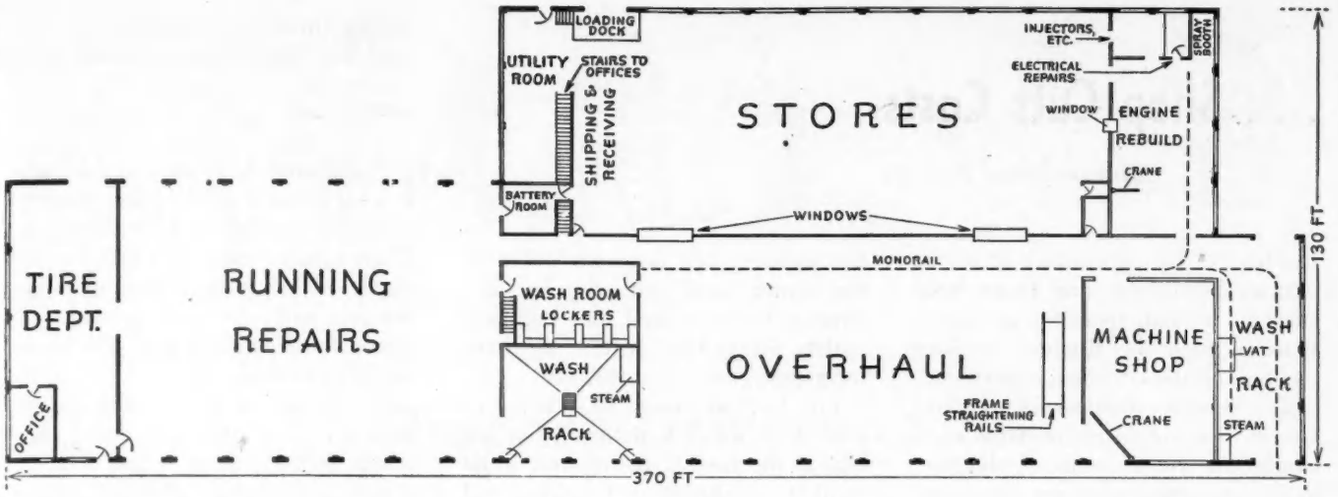
But this is primarily the story of the maintenance shop, designed principally for the service and overhaul with assembly-line efficiency of 149 heavy-duty diesel-powered road units (both three-axle straight trucks and three-axle tractors) which form the backbone of the 653-unit Garrett fleet, which each roll an average of 15,000 miles a month.

This shop, in less than six months, has saved approximately $5,000 in maintenance costs in spite of increases in the cost of parts, fuel, etc. In addition it has greatly improved morale of the mechanics which is reflected in better maintenance of the vehicles they service. Unfortunately the shop has not been in operation long enough to permit tabulation of actual "before and after" comparisons of maintenance efficiency, but drivers frequently volunteer information that minor details which had been overlooked in the old shop are now being taken care of promptly.

Running Repairs

ONCE in the "running repairs" section of the shop (see floor plan above), we were immediately impressed by the fact that maintenance procedures were unusual.

There are no slow lanes, fast lanes



Floor plan shows 14 bays for general service at left, eight bays for more specialized overhauls in center, the machine shop and engine rebuild area at right. Note connecting monorail

By Bart Rawson
Editor, Commercial Car Journal

Fig. 1. Key to the operation of portable equipment is the series of outlet boxes, one between each pair of stalls. Box provides multiple female plugs for 110 and 220 v current, a low pressure and a high pressure air fitting

Fig. 2. Using power from the outlet box, one man lubricates the front end with portable equipment while another man tightens rear wheel lugs. Other portable equipment is available, some of which is shown in the foreground

or inspection lines. Instead all service, short of a major overhaul or major unit replacement is performed on the spot in whichever of the 14 bays (seven double end lanes) the vehicle may be located. These on-the-spot operations include routine inspections, tire changes, lubrication, a cylinder head change or anything that may be necessary, except major replacements or chassis repairs. Seldom does a Garrett truck reach the major overhaul section (see below) unless it has accumulated mileage since last major repair in the vicinity of 100,000 miles.

Of course, Garrett carries production line techniques to the nth degree in the overhaul and stocking of major components ranging from brake shoes, injectors, fuel pumps and cylinder heads to complete engines, rear ends, transmissions, etc. These are

(TURN TO NEXT PAGE, PLEASE)

. . . Shop Cuts Costs

Continued from Page 53

overhauled by specialized crews in various departments and drawn from stock as needed, speeding up operations in both the Running Repairs section and the Overhaul department.

To handle on-the-spot repairs Garrett has completely portable shop equipment and a means of plugging in this equipment wherever it may be. This applies to both electrically-operated and air-operated equipment. The key to this phase of the operation is a series of multiple-outlet services boxes which hang from the ceiling between each pair of stalls. Each outlet box is equipped with four conventional 110-volt drop cord receptacles, one 3-phase 220-volt outlet for electric welders, one large air outlet in the center used primarily for air-wrench operation and four half-inch outlets for general service air lines for grease guns, air drills, etc.

Fig. 1 shows one of these boxes in use. One man is tightening wheel lugs at the rear of the tractor, while another is lubricating the front end with a portable lubricating unit. At the same time, another air line and an electrical line are being used in the service operation of the tractor at right.

Fig. 2 shows a more general view of the shop with considerable portable equipment in view including a lubricating oil container, an electric welder (lower right-hand corner), an acetylene welder and a portable jack. Incidentally there are no pits or lifts in the entire facility, everything being done on 10 lift units from the floor.

Fig. 2 also shows the collector system for exhaust gases located directly above the vertical stack on each truck. These exhaust stacks are taken to the center of the shop where they are merged with two squirrel-cage exhaust fans which expel all fumes rapidly to the outside.

To the left of the running repairs section is a complete tire service shop which follows more or less conventional lines except that it is big enough to house all the company's tire stock as well as spreaders, jacks, tube repair stands, tire inflation cages and other essential equipment. To the right, near the center of the building, is a two-stall washrack complete with steam unit used primarily for routine washing of all road equipment.

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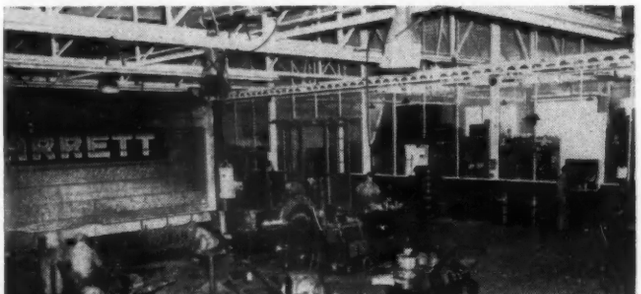


Fig. 3. General view of overhaul section shows wheel carts used for handling miscellaneous parts taken from trucks

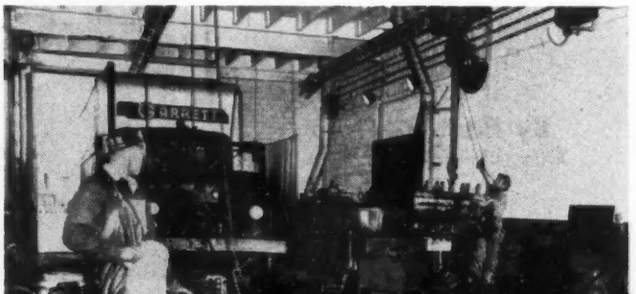


Fig. 4. Disassembly of engine is done in wash rack where small parts are steam cleaned, block is hoisted to tank

Fig. 5. Engine rebuild room is clean and well equipped with separate spray booth for engines shown in right background

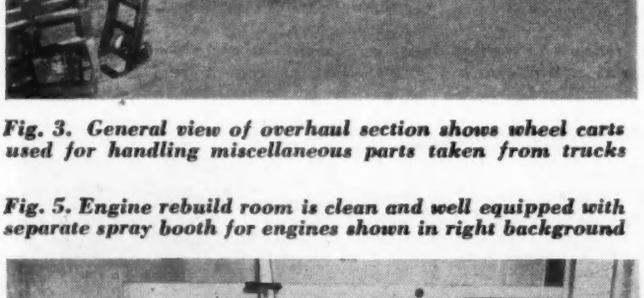
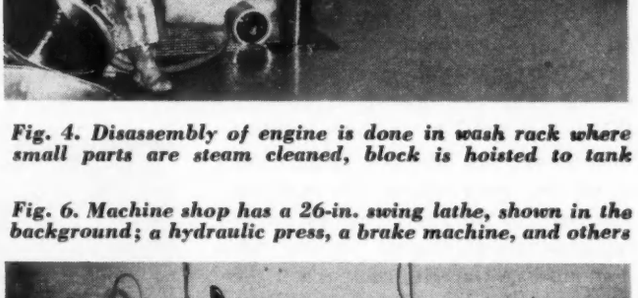


Fig. 6. Machine shop has a 26-in. swing lathe, shown in the background; a hydraulic press, a brake machine, and others



Prepare Drivers to "Tell it to the Judge"

Familiarity with basic courtroom procedure should be a part of driver training

By Bob Beasley

A TRUCK DRIVERS' RECORD for avoiding lawbreaking is a credit to their ability and training. Yet they are human and are bound to be arrested sometime, rightly or wrongly, for breaking one of the multitude of traffic laws of the nation. When a driver goes from the cab of his truck to a courtroom, it would profit him and his employer if he were as well trained to handle his courtroom defense as he is prepared to direct his truck's highway travels.

Few truck fleets entirely neglect instructing drivers about what to do when arrested. However, many merely tell drivers to contact fleet headquarters when trouble arises, so that a fleet representative may be dispatched to the scene to give necessary legal advice. When, as is most often the case, the charge against a driver is minor and he feels it does not warrant the delay or expense of contacting the home office, he should know how to present his case in court with assurance. Inability to do so is costly to many drivers and their fleets when damages must be paid.

Procedure Easily Learned

WHAT a driver needs to know about courts is easily learned, and probably could be taught by most fleet operators with little difficulty by adding such training to customary directions about handling arresting officers and reporting accidents. The driver should be equipped with a little knowledge about the operation of courts and the realization that his best defense is a level-headed presentation of facts. Technical legal understanding and high-flown courtroom philosophy are for lawyers and judges, not truck drivers.

Because in more serious cases the driver will have trained legal advice, he need be instructed only about proceedings in minor misdemeanor trials. And he should be taught how to recognize minor from serious cases.

Is the Charge Serious?

DETERMINING the seriousness of the case is not always easy. The courts divide charges into "misdemeanors," less serious offenses, and "felonies," more serious crimes.

The driver facing a felony trial, of course, should seek legal advice. Because penalties for misdemeanors may be as severe in most states, as a $500 fine or a year in jail, or both, the accused should decide on a misdemeanor case's seriousness by the harshness of the punishment sought by the court's prosecutor.

If the recommendation is more than a $50 fine or any jail confinement, the charge is serious.

How can a driver learn what the prosecutor is going to charge and recommend prior to the trial? Before a charge is made against a driver, the prosecutor of the court usually will interview him. If a charge is made upon the word of the arresting officer without such an interview, the driver should seek one.

At the interview's close, the driver should ask the prosecutor what he thinks the charge will be and approximately what penalty the prosecutor will recommend to the court. If the charge is serious and/or the sentence possibly severe, the driver should contact his home office for legal counsel *immediately*.

Lesser trials in virtually all states are operated in the same simple manner; therefore, an acquaintance with

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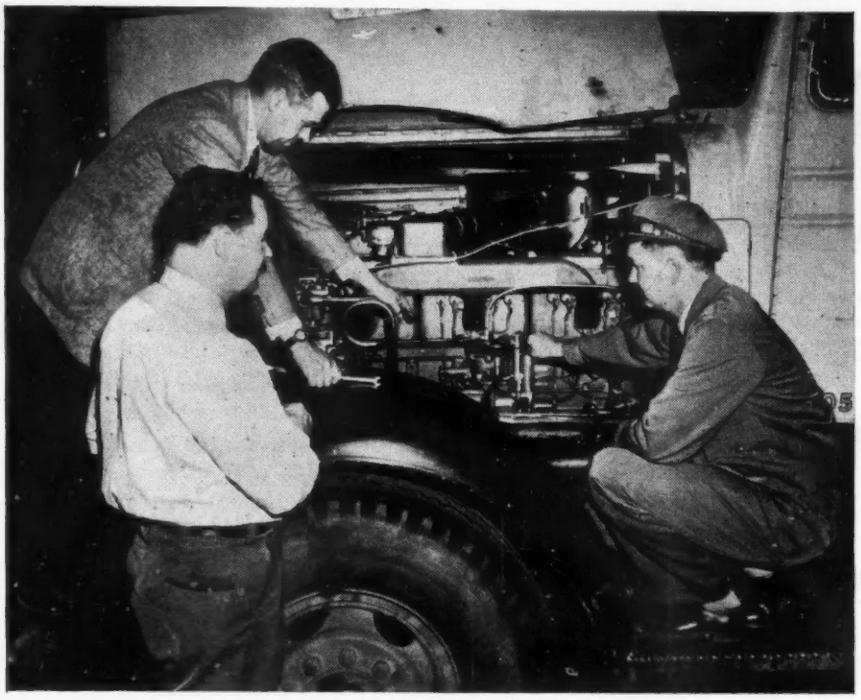
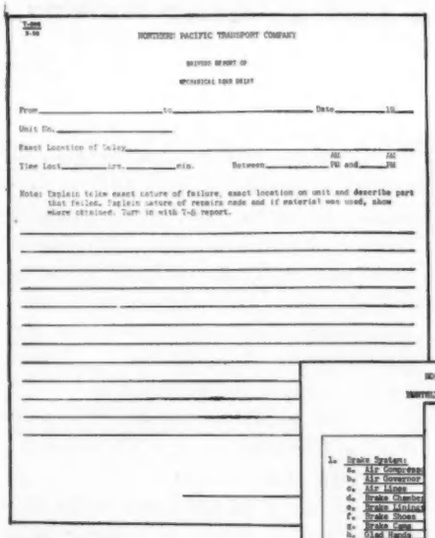


Above: At the start of each run, a careful check is made of all parts of the unit including safety gear

Left: Driver receives instructions in minor adjustments which may be needed in the unit's diesel engine

Northern Pacific's



NORTHERN PACIFIC TRANSPORT COMPANY

DRIVER'S REPORT OF MECHANICAL ROAD DELAY

From _____ to _____ Date _____ 19__

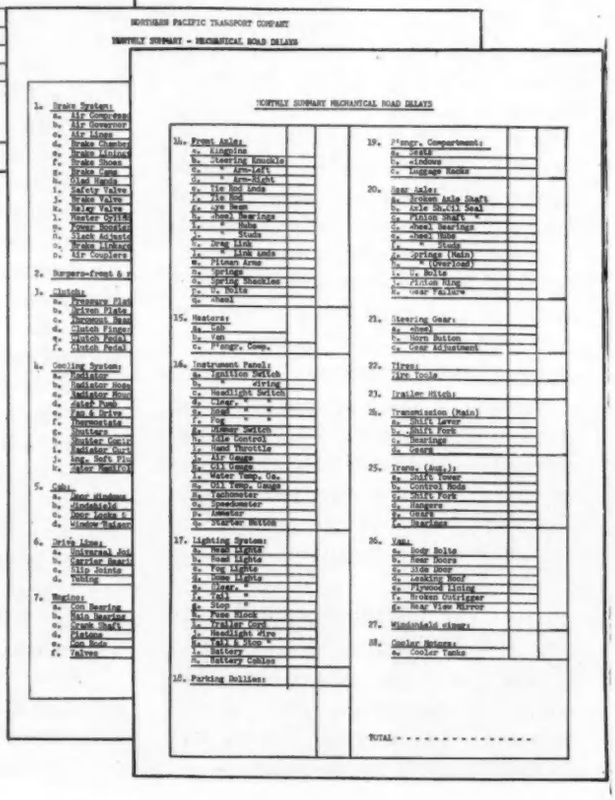
Unit No. _____

Exact Location of Delay _____

Time Lost _____ Hrs. _____ Min. Between _____ AM/PM and _____ AM/PM

Note: Explain below exact nature of failure, exact location on unit and describe part that failed. Explain nature of repairs made and if material was used, show where obtained. Turn in with T-8 report.

Above: For each delay which is due to mechanical defect, this report is made out by the driver involved giving details of repairs made



NORTHERN PACIFIC TRANSPORT COMPANY

MONTHLY SUMMARY - MECHANICAL ROAD DELAYS

1. Brake System:
   a. Air Compressor
   b. Air Governor
   c. Air Lines
   d. Brake Chamber
   e. Brake Lining
   f. Brake Shoes
   g. Brake Cams
   h. Oiled Hands
   i. Safety Valve
   j. Brake Valve
   k. Relay Valve
   l. Master Cylinder
   m. Power Booster
   n. Slack Adjuster
   o. Brake Linkage
   p. Air Couplers
2. Bumpers-Front & R
3. Chassis:
   a. Frt. Spring Plat
   b. Driven Plate
   c. Thrust Bear
   d. Clutch Finger
   e. Clutch Pedal
   f. Clutch Pedal
4. Cooling System:
   a. Radiator
   b. Radiator Hose
   c. Radiator Hose
   d. Clutch Pump
   e. Fan & Drive
   f. Thermostats
   g. Shutters
   h. Radiator Guard
   i. Radiator Curt
   j. Eng. Soft Plu
   k. Water Manifol
5. Cab:
   a. Rear Windows
   b. Windshield
   c. Door Locks &
   d. Window Raiser
6. Drive Lines:
   a. Universal Joi
   b. Carrier Beari
   c. Slip Joints
   d. Tubing
7. Engine:
   a. Con Bearing
   b. Main Bearings
   c. Crank Shaft
   d. Pistons
   e. Con Rods
   f. Valves
10. Parking Dollies:
11. Front Axles:
    a. Kingpins
    b. Steering Knuckle
    c. " Arm-Left
    d. " Arm-Right
    e. Tie Rod Ends
    f. Tie Rod
    g. Axe Beam
    h. Thrust Bearings
    i. " Hubs
    j. " Studs
    k. Drag Link
    l. " Link Ends
    m. Pitman Arms
    n. Springs
    o. Spring Shackles
    p. U. B. Bolts
    q. Wheel
15. Heaters:
    a. Cab
    b. Van
    c. P'engr. Comp.
16. Instrument Panel:
    a. Ignition Switch
    b. " Wiring
    c. Headlight Switch
    d. Clearance "
    e. Fog " "
    f. Cowl " "
    g. Dimmer Switch
    h. Idle Control
    i. Hand Throttle
    j. Air Gauge
    k. Oil Gauge
    l. Water Temp. Ga.
    m. Oil Temp. Gauge
    n. Tachometer
    o. Speedometer
    p. Ammeter
    q. Starter Button
17. Lighting System:
    a. Head Lights
    b. Road Lights
    c. Fog Lights
    d. Dome Lights
    e. Clear. "
    f. Cab "
    g. Stop "
    h. Fuse Block
    i. Trailer Cord
    j. Headlight Fire
    k. Tail & Stop "
    l. Battery
    m. Battery Cables
19. P'engr. Compartment:
    a. Seats
    b. Windows
    c. Luggage Racks
20. Rear Axles:
    a. Broken Axle Shaft
    b. Axle Shaft Seal
    c. Pinion Shaft "
    d. Wheel Bearings
    e. Wheel Hubs
    f. " Studs
    g. Springs (Main)
    h. " (Overload)
    i. U. B. Bolts
    j. Pinion Ring
    k. Gear Failure
21. Steering Gear:
    a. Wheel
    b. Horn Button
    c. Gear Adjustment
22. Tires:
    Tire Tools
23. Trailer Hitch:
25. Transmission (Main)
    a. Shift Lever
    b. Shift Fork
    c. Bearings
    d. Gears
25. Trans. (Aux.):
    a. Shift Tower
    b. Control Rods
    c. Shift Fork
    d. Hangers
    e. Gears
    f. Bearings
26. Van:
    a. Body Bolts
    b. Rear Doors
    c. Side Door
    d. Leaking Roof
    e. Plywood Lining
    f. Broken Outrigger
    g. Rear View Mirror
27. Windshield Wiper:
28. Cooler Storage:
    a. Cooler Tanks
TOTAL - - - - - - - - - - - - - - -

Right: A monthly summary made from driver reports gives an accurate record of failures due to mechanical ills which may be compared with records of other months to find cause

A COOPERATIVE driver-training plan has been started at Northern Pacific Transit Co., Billings, Mont., which brings together the functions of the safety director and the director of maintenance. As a result, the company's overall safety record has been increased and approximately 1000 miles has been added between mechanical road delays.

When a new driver is hired, it is required by company rules that he spend time in the shop, under the direct teaching and observation of the safety supervisor and the superintendent of maintenance. The new driver becomes familiar with what is being done to the equipment he will operate, and the reasons why it is done.

T-584

NORTHERN PACIFIC TRANSPORT COMPANY

EMERGENCY EQUIPMENT

The items marked for this unit must be on the unit at all times and checked at completion of each run.—Driver is Responsible.

Unit_____ Date_____

ITEMS	On Unit	Not on Unit	ITEMS	On Unit	Not on Unit
Axe			Dash—No.		
First Aid Kit			Tail.—No.		
Water Bag			Stop.—No.		
Belts—Fan No.			Head.—No.		
Gen.—No.			Shovel		
Comp.—No.			Tire Chains Single		
Bucket			Duals		
Blow Torch			Jiffy		
Flags (2) Staffed			Tow Chain		
Flares (2)			Extra Coil—No.		
Fire Ext. (Make)			Extra 20 Amp. Fuses		
Jack & Handle			Extra 30 Amp. Fuses		
Jack Block			Extra 50 Amp. Fuses		
Lug Wrench			Extra Points No.		
Lug Wrench Handle			Extra Spark Plug No.		
Spare Lamps Clearance—No.			Extra Bobs No. Condenser—No.		

T-607

Northern Pacific Transport Company

Unit_____ Date_____ Speedometer_____

Emerg. Equip.	On-(Yes or No)	Item	Defect	Mech.
Axe		Brakes		
1st Aid Kit		Battery		
Water Bag		Body		
Belts—Fan		Cooling		
Belts—Gen.		Clutch		
Belts—Comp.		Differential		
Bucket		Drive Line		
Blow Torch		Generator		
Flags (2)		Ignition		
Flares (2)		Instruments		
Fire Ex.		Lubrication		
Jack & Handle		Lights		
Jack Block		Motor		
Lug Wrench		Starter		
Lug Wrench Handle		Springs		
Spare Lamps		Steering		
Shovel		Swipes		
Tire Chains		Tires		
Tow Chain		Transmission		
		Wheels		
		Windshield		
		Misc.		

NOTE—Make separate report for each unit. Enter additional detail on reverse side. Do not write in space for mechanic initials.

Signed_____
Driver

Above: Driver trip report provides space for noting any mechanical defects discovered while on the run Left: A check is made of all emergency equipment as trip is started noting items not found on the unit

NORTHERN PACIFIC TRANSPORT COMPANY

Billings, Montana

AMBULANCE EQUIPMENT INVENTORY

Unit No._____ Place_____ Date_____

	On Unit	Not on Unit	Remarks
Jack			
Jack Block			
Jack Handle			
Lug Wrench			
Lug Wrench Handle			
Red Flags (staffed & wrapped)			
Flares - Oil			
Flares - Reflector			
Extra Coil - Mounted			
Extra Condenser - Mounted			
Extra Fuses - Master 20 Amp.			
Extra Fuses - Small 20 Amp			
Extra Fuses - Small 50 Amp			
Fuses (3)			
Tire Chains - Single			
Tire Chains - Dual			
Tire Chains - Jiffy			
Tightener - Tire Chains			
Fire Extinguisher (Make & Capacity).			
Snow Shovel			
Extra Light Bulbs - Clearance			
Extra Light Bulbs - Dash			
Extra Light Bulbs - Tail			
Extra Light Bulbs - Stop			
Extra Light Bulbs - Ditch			
Extra Light Bulbs - Head			
Extra Light Bulbs - Spot			
Extra Points			
Extra Spark Plug			
Extra Rotor			
Extra Belts - Fan (Part No.)			
Extra Belts - Generator (Part No.)			
Extra Belts - Compressor (" No.)			
Tow Chain			
Axe			
First Aid Kit			
Blow Torch (Oct 15-May 15) Nozzle			

License No._____ MSC No._____ ICC No._____

(Indicate with "I" in proper column to show if ON or NOT ON unit.) Signed_____
(Person Making Check)

A periodic inspection checks all of the emergency gear, making sure all units in operation have full supply

Driver Training

Includes Shop Time

By N. D. Huston
Supervisor of Maintenance
and
C. W. Hawkes
Safety Supervisor
Northern Pacific Transport Co.
Billings, Mont.

Safety and maintenance directors give each new driver a course in the fundamentals of vehicle and safety equipment maintenance

Length of Time Optional

THE SHOP training begins as soon as the new man has been screened by personnel officers and has passed his preliminary driving tests. The length of his tour of duty in the shop varies from three to 10 days, depending entirely upon the background and aptitude of the new driver. He remains until he has a clear picture of what we expect of him in the care of the equipment he will have on the road.

We also believe that questions which may later make the difference between a minor delay or a major repair job are best answered by the men who are responsible for the safety and maintenance of the Northern Pacific fleet.

What the Course Includes

THERE are several things which we feel the driver must know thoroughly before he is ready to operate expensive equipment over the road. These include:

1. He should familiarize himself with the engine and other major components of his equipment. He must know the probable cause and result when the engine is not functioning correctly.

2. Since our fleet is composed largely of diesel units, he should be shown the fundamentals of priming and trouble-shooting on the fuel system of diesel engines.

3. On the diesels which have mechanical adjustments, the new driver should know how to set valves and injectors.

4. He should be acquainted with the lube system of the unit, the emer-

(TURN TO PAGE 110, PLEASE)

The Where and Why of ENGINE DEPOSITS

Gulf tests show as many as seven factors contributing to engine deposits — indicate necessity for additional test work in this field

By R. S. Spindt and Court L. Wolfe

Gulf Research and Development Co.

THE range of conditions under which a gasoline engine will turn over under its own power is pretty wide and a variety of things go on which can contribute to fouling up the inside of the unit. They can be listed as follows:

1. The gasoline may start to oxidize in the manifold.
2. All of the hydrocarbons in the combustion chamber are subjected to precombustion reactions on the compression stroke and before the flame consumes them. Some of the products of these reactions find their way into the crankcase either by solution in the oil film on the cylinder walls, or by way of the blowby gases.
3. Some of the crankcase oil is sprayed past the piston into the combustion chamber. Here some of this spray burns completely, while some is only singed.
4. These droplets of partly-oxidized oil and gasoline may fall out of the gas space and be broiled on the head surface or fried on the piston crown.
5. The lubricating oil mist in the crankcase may be oxidized by the oxygen in the gases which reach it.
6. During all this time, the lubricating oil passes from the crankcase to the combustion chamber and back again — both ways — carrying products from the combustion chamber and the crankcase with it. Depending on conditions, it sometimes creeps and it sometimes runs.

With some or all of these processes going on during any kind of operation, the engine cannot be expected to stay clean inside. When everything is tight, well adjusted, and properly operated, the difficulties are minimized, but eventually trouble catches up.

If mechanical failures due to improper assembly or physical defects, which account for many engine difficulties, are neglected, the remaining troubles in an engine can be traced to the fuel and oil or occasionally to the dirt that gets into it. It is of interest to follow the course of these materials through the engine and note the problems that arise.

Gasoline, as supplied to your car, is a collection of reactive molecules. In addition to the hydrocarbons, it may contain inhibitors to protect it against rapid gum formation, dyes for identification and ethyl fluid to improve its anti-knock quality. It is true that no reputable manufacturer will knowingly sell high-gum gasoline. At the same time, practically all fuels on the market contain at least some olefins and other unstable compounds which may oxidize to form gums if stored a long time in contact with air and metal catalysts.

The quality of the air taken in by the engine is an important variable. Most engines today are equipped with air filters to remove dust and dirt. While these filters are close to 100 per cent efficient, situations occasionally arise where the amount of dust and dirt exceed the capacity of the filter to handle it. Under these conditions they will get into the engine and may be incorporated in any deposits that form. In addition the air entering the breather tube carries solids with it directly into the oil system. Under certain conditions this may be very serious.

The gasoline-air mixture, from the carburetor, goes to the intake manifold. This area has been known to give some difficulty because of deposit accumulation. Observation with a glass manifold indicates that a surprising amount of the fuel in the manifold is still in a liquid state under normal operating conditions. In our test engines, measured air-fuel temperatures of 150°F. do not completely dry up the manifold.

Following the manifold, the problem of intake valve deposits and valve burning requires attention. This problem seems to be of an ephemeral character. It has been reported in certain fleets only during certain periods of operation. That the gasoline may be involved seems reasonable. This laboratory has established conditions which produced intake port and valve deposits and subsequent valve burning. The conditions necessary for these phenomena were high output at high coolant and induction

(TURN TO PAGE 157, PLEASE)

Articles excerpted from papers presented at SAE West Coast Meeting, Seattle, Wash.

PISTON RINGS

and the Wear Problem

Chrome plated rings, cast-in groove inserts, improved cylinder liner materials reduce ring wear, but more development work is necessary

By A. M. Brenneke
and
A. J. Weigand
Chief Eng.
Fleet Sales Eng.
Perfect Circle Corp.

While chrome plated compression rings have been a great boon to engine durability, we have not yet reached Utopia. As ring people, we are still plagued by some problems, the most critical of which is excessive top-groove and top ring-side wear. The second in importance could be summed up into cylinder, ring and valve wear. They are grouped together because it seems that all three conditions are turning up simultaneously.

We, as ring manufacturers, you, as fleet operators, have very little choice in the matter of fuel ingredients. If the increased complexity of fuel composition is a contributing factor, our best hope for a quick solution lies in the direction of mechanical design. The effect of production, performance and economic pressures on the petroleum industry can be expected to lead to even further complications. Just as we have always in the past found a way to remedy an existing condition, we will some day find the complete solution for this top groove and ring side wear. In the meantime considerable progress has been and is being made. Cast-in groove inserts are now successfully bonded into aluminum pistons and retard the side wear of the top groove and top ring. The principal piston manufacturers have made them available for various engines. There is a great deal of development going on at present to reduce their cost and plain cast iron inserts have been doing a very enviable job as compared to the costly Ni-Resist insert. Considerable work is being done by piston manufacturers on entirely different design of inserts.

In the field you can find top groove spacers being used with good results by truck and bus fleets and some of the ring manufacturers have developed special tools to remachine ring grooves to accommodate spacers above the top ring.

Cylinder materials are an item of design which have been overly neglected. Few engine builders have gone farther than to specify hardness and chemical composition. The more vital factors of microstructure and physical properties are seldom covered at all. The intense activity in engine development and the concentration of operators on reducing maintenance cost in the post-war period has stimulated considerable progress in this field. The most important factor in a cylinder material is its structure. Graphite is probably the most important constituent in cast iron which is intended to serve as a bearing.

During the post-war period considerable difficulty was encountered both by engine builders in the process of developing new engines and by operators in maintaining existing engines with cylinder liner materials having improper microstructures. These materials were produced by the centrifugal casting process in cold molds. Such structures are now generally prohibited by specifications but are still occasionally encountered. They are particularly susceptible to corrosive and scuffing types of wear.

Although centrifugal cast liners are generally preferred for uniformity and freedom from defects, completely satisfactory structures and high quality cylinder material can be produced either by the centrifugal process or by static casting in sand molds. In the case of the centrifugal process, the technique must be such as to insure a cooling rate comparable with that of the sand casting and the casting as it comes from the mold must be entirely free of chill and fully machinable.

Considerable reduction in cylinder wear and ring wear can be attributed to the increasing trend toward the use of fully hardened cylinder liners of the wet or dry type. The fully hardened liner is usually in the range of 450 to 550 Brinell hardness. The fully hardened liner is definitely to be preferred over the as-cast liner in the 200 to 300 Brinell range primarily for its greater resistance to abrasive wear. We believe that abrasive wear is probably the largest contributor to our overall wear problem. Economics of the situation generally dictate the choice between fully hardened and as-cast liners.

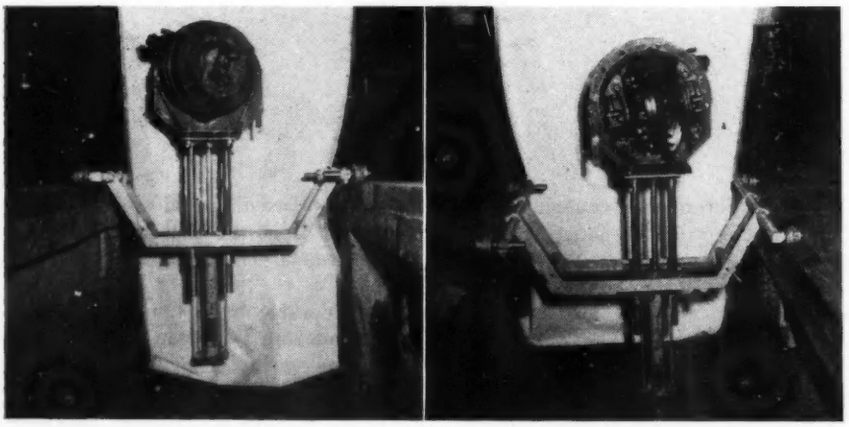
The question is occasionally asked as to the relative compatability with chrome plated rings of the as-cast and fully hardened liners. Chrome plated top rings may be used on either type of liner with complete assurance of excellent compatibility.

SHOP HINTS FROM FLEET SHOPS

HINT OF $25 THE MONTH

Light Weight Pit Jack

by E. R. Lesage
Denver Tramway Corp., Denver, Colo.



This hydraulic pit jack for removing differential carrier assemblies consists of a four-wheel chassis with a cradle for suspension of a one-ton Hein Werner hydraulic bumper jack from which the head has been removed and replaced with an 8 in. by 8 in. flat plate. Upon the upper surface we place a special fixture that will support a differential carrier at the correct angle. The bumper jack provides enough travel vertically to raise a carrier to the desired height for installation and to lower it far enough so that the top of carrier flange will pass under the rear skirt of bus when pit jack is rolled out.

The slender bumper jack ram is not centering the bus over the pit, the plate which steadies the upper part of bumper jack barrel is adjustable laterally in order to line it up with center of carrier.

This laterally movable plate supports the load by means of two ⅜ in. rods, at the lower end of which is a stirrup upon which the bumper jack base rests and to which it is securely clamped. The laterally movable plate can be clamped in any position of its travel by means of four knurled head screws engaging gib strips.

The slender bumper jack ram is not rigid enough alone when extended to support the carrier assembly without swaying. To eliminate any tendency to sway, two seamless steel tubes are welded to bosses on the underside of the jack top plate and slide through two long bosses which are welded to the laterally movable plate.

The chassis is a very light, yet rigid assembly. Two seamless steel tubes form the main frame together with connecting saddle consisting of two steel angles bent as shown. Wheels are steel, provided with needle bearings and are mounted on stub axles which are pressed into, and also welded to the steel inserts at the ends of the main frame tubes. The angle iron saddle was made as narrow as was considered practical in order to provide a maximum of working space.

1. Water Pump Tool

By E. J. Giroux
N. E. Power Service Co.
Worcester, Mass.

Here is a handy tool for removing the water pump impellers without damage to the fins. This tool fits inside the fins and permits the turning of the impeller into the shaft in assembly or disassembly.

The head is made from a piece of flat stock 1 in. wide and 3 in. long and a piece 6 in. long. The long piece is bent to 120 deg. and the short piece is welded to the center at 120 deg. Handle is a cold rolled rod 20 in. long, bent 2 in. from the end and welded to the head.

2. Thread Measurement

by Frank Coulomb
Inglewood, Calif.

A simple way to measure depth of an undercut or thread diameter involves the use of a cork and two pieces of steel piano wire. Lay shaft

$10 FOR ALL HINTS PUBLISHED EACH MONTH

$25 FOR THE BEST HINT PUBLISHED EACH MONTH

along top of cork and insert wire across diameter. Then you can measure distance with a rule. Be sure wire is secure so that it does not move after it is once set.

3. Axle Alignment Tip

by W. D. Bach
Vandigriff Distributors, Inc.
Montgomery, Ala.

In checking for trailer axle misalignment it has been necessary to remove wheels or hubs and measure from the trailer king pin to the center of the axle. Here is a quicker way of locating the axle centers.

Make up a board of the dimensions shown, with a clamp and wing nut so that the jig can be inserted across the diameter of the wheel and locked. Nail a metal plate to the outside of this board and chalk. Jack up the axle and place a surface gage on the hub. Rotate wheels and locate axle centers with markings on wheel plate.

This jig is for a 20-in. wheel, but it can be used with 22 and 24-in. by the use of a small wooden block on either end of the inside wheel clamp.

4. Ford Fan Mounting

by M. D. Bondurant
L. P. Stuart and Bro., Inc.
Washington, D. C.

We have had trouble with fan mounting bolts breaking off in the Ford F-8, 7EQ or the E series, especially where air compressors are installed. Result, a fan sometimes goes through the radiator. We correct this condition by drilling and tapping two additional holes below the original holes as shown. We use 7/16 studs with USS threads on one end and SAE threads on the other to hold the fan assembly securely.

5. Tandem Suspension Modification

by F. T. Franklin
Palestine, Ohio

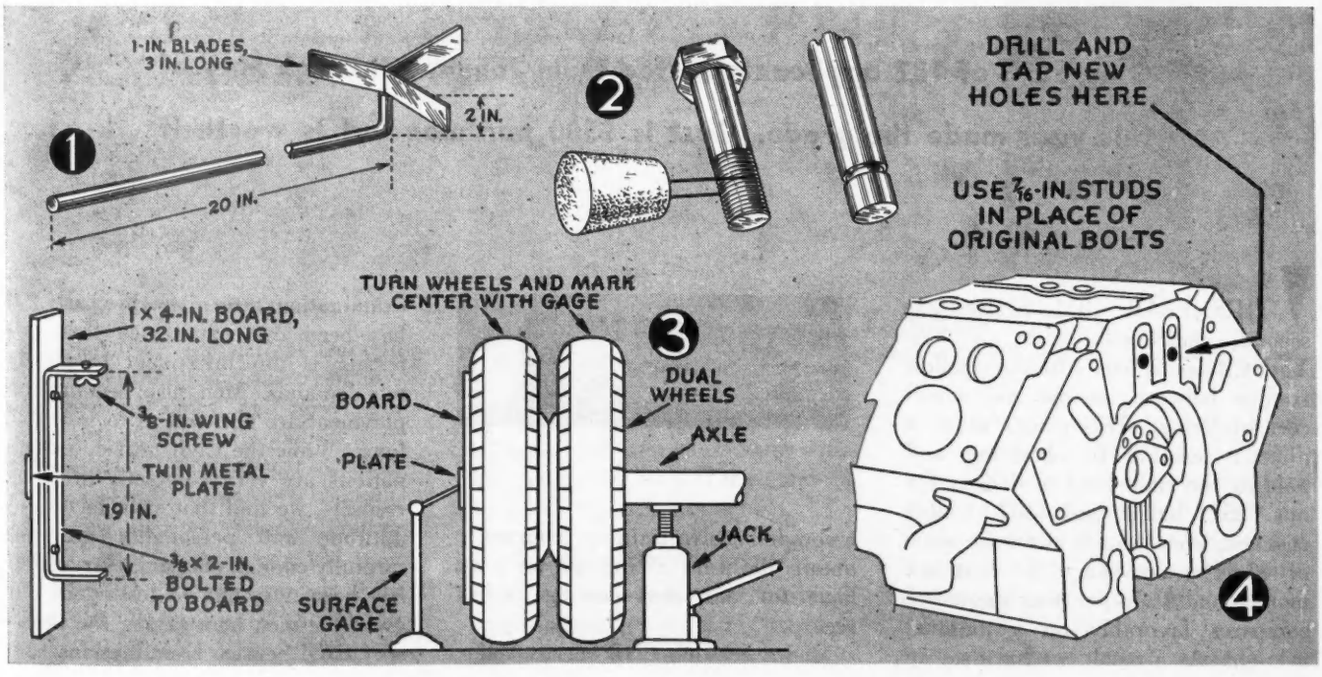
The bushings in the bell cranks on Brown tandem trailers have a habit of turning around in the aluminum castings, making it impossible to grease them. We have had to remove some of them in order to lubricate the bearing surfaces.

To overcome this nuisance, remove the bushings and cut a groove in it so that you have a grease passage approximately all the way around. This leaves sufficient bearing surface to last a long time, and simplifies the lubricating problem.

6. Dual Wheel Removal

by Jeff Watters
Halliburton Oil Well Cementing Co.
Duncan, Okla.

Our hint is a very simple remedy for an old headache . . . removing dual wheels when a dolly is not available. Place a small amount of soapy water under the tire and it will slide.



This is a postgraduate course in trolley coach operation. It is optional and confined to graduates of basic bus operation course after six months

Accidents Drop with

Seattle's Training Techniques

Only 36% of 132 applicants tested from January through May of this year made the grade. Cost is $500 per man but is worth it

THIS YEAR, 1951, Seattle was second, statistically, only to New York City as the city with the smallest residue between income and actual cost of living. This places us in a difficult position in obtaining and holding the right kind of drivers for our 252 buses and 307 trolley coaches; even though our wage scale of $1.71½ per hour for first six months and $1.76 per hour thereafter compares favorably on a national average. As a result, we have set up

a comprehensive training program to obtain the kind of drivers we must have for our above-average safety record.

Under Seattle's Civil Service setup, examinations are given bi-yearly. It has been our experience that this testing is too infrequent to satisfy our demands. Men, also, seeking employment are not content to wait that long. While the Civil Service examinations are very complete, in many respects, we find that such factors as aptitude and personality are not carefully enough checked. Our answer has been a system of testing of our own; the men later taking the necessary Civil Service Examinations.

SEATTLE TRANSIT SYSTEM
SAFETY DEPARTMENT
January 1951

GROSS EARNINGS AND CLAIM EXPENSE BY YEARS

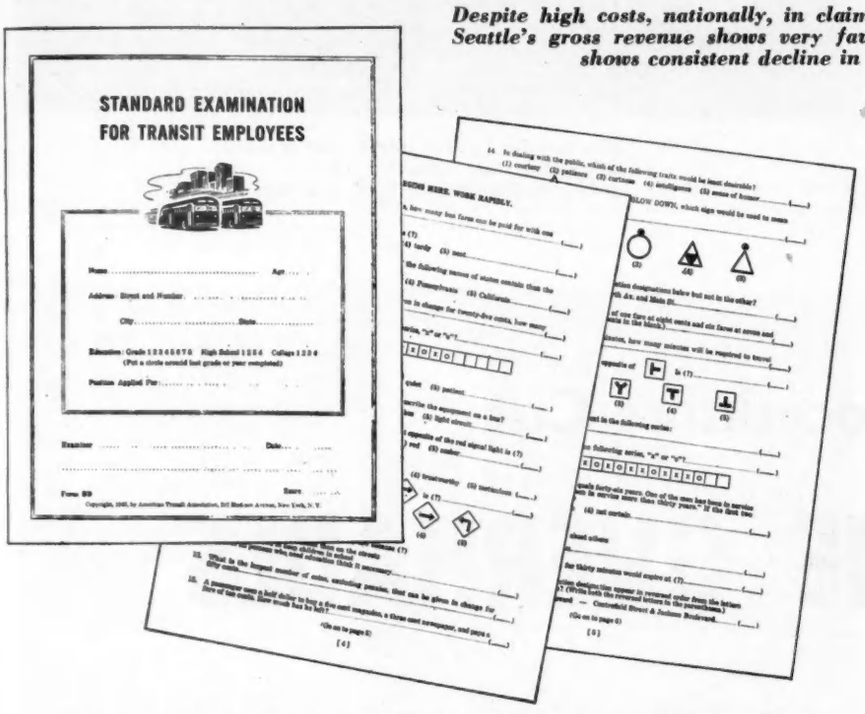
Year	Gross Railway Earnings	Total Claim Expense	Percent of Gross Revenue
1930	5,854,467.56	80,113.33	1.52
1931	4,717,408.95	103,214.87	2.19
1932	3,848,513.29	73,949.65	1.92
1933	3,643,185.87	63,185.31	1.73
1934	3,953,333.71	93,743.81	2.37
1935	3,974,585.25	85,935.22	2.16
1936	4,160,147.33	75,723.41	1.82
1937	4,465,303.39	150,744.20	3.38
1938	4,354,066.86	99,925.13	2.29
1939	4,346,752.83	95,495.63	2.19
1940	4,579,821.56	91,893.89	2.00
1941	5,531,678.01	107,327.39	1.94
1942	7,981,213.50	118,725.84	1.49
1943	9,768,908.37	160,695.49	1.64
1944	10,901,867.09	257,374.78	2.36
1945	11,085,377.48	236,562.01	2.13
1946	9,909,087.42	188,722.43	1.92
1947	9,622,675.07	200,427.18	2.08
1948	9,711,911.40	199,598.26	2.06
1949	10,072,601.88	188,896.76	1.87
1950	9,910,834.65	215,912.77	2.18

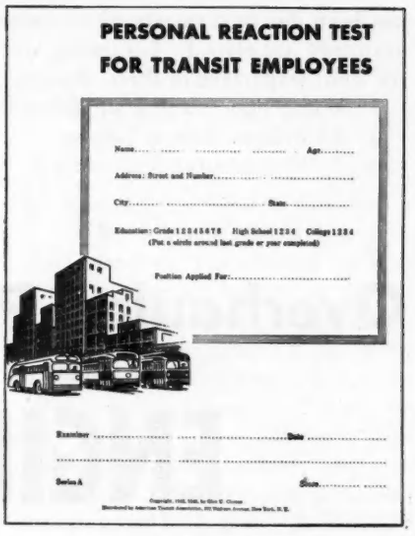
SEATTLE TRANSIT SYSTEM
SAFETY DEPARTMENT
January 1951

MILES OPERATED PER ACCIDENT

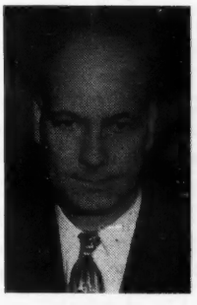
Year	Traffic Accidents	Total Accidents	Miles Operated	Miles per Accident Traffic	Miles per Accident Total
1930	3,764	4,768	16,176,550	4,298	3,393
1931	3,139	4,184	15,871,377	5,056	3,793
1932	2,347	3,232	14,238,658	6,067	4,405
1933	2,090	2,961	14,355,570	6,773	4,780
1934	2,411	3,300	14,252,910	5,912	4,319
1935	2,322	3,358	13,909,624	5,990	4,142
1936	2,576	3,547	14,399,027	5,590	4,059
1937	2,885	4,020	16,624,205	5,762	4,135
1938	2,624	3,637	16,584,803	6,320	4,560
1939	2,595	3,827	16,358,969	6,306	4,275
1940	2,707	4,041	17,469,017	6,448	4,322
1941	2,820	3,952	19,171,088	6,798	4,850
1942	2,893	3,829	21,163,263	7,315	5,527
1943	3,350	4,404	22,996,587	6,865	5,222
1944	2,984	4,143	24,235,748	8,122	5,853
1945	3,040	4,165	24,416,778	8,032	5,862
1946	2,896	4,036	23,947,718	8,269	5,922
1947	2,268	3,294	23,842,752	10,513	7,238
1948	1,864	2,884	23,650,828	12,688	8,200
1949	1,993	3,002	23,174,490	11,628	7,719
1950	1,894	2,956	22,125,166	11,682	7,485

Despite high costs, nationally, in claim settlements these days, the per cent of Seattle's gross revenue shows very favorable comparison. Accident ratio, also, shows consistent decline in relationship to miles operated





The standard examination for transit employees and the personal reaction tests, which Seattle uses as an important aid in driver selection, are distributed by the American Transit Assn., N. Y. C.



36% Applicants Qualify

By G. E. Moyer
Superintendent of Transportation, Seattle Transit System, Seattle, Wash.

WE SOLICIT applications through the Washington State Employment Service, radio, and newspaper advertising. Those responding are interviewed. If they appear capable, we proceed with testing and training.

In the period from January through May of this year 132 men were tested. Twenty-two of these failed; 14 dropped out; 10 did not appear for class work. Thirty-six per cent, or 47 of the original 132, qualified. Our standards are sufficiently rigid that each of these passed the Civil Service Examinations.

Physical Requirements

PRIOR to any testing or training, the following physical requirements must be met. We have set these up as the minimum which justifies the expense of training.

1. Men must be between the ages of 21 and 35. While the ideal is believed to be 24 to 28, we have found it expedient to extend upward and downward in obtaining sufficient personnel.

(TURN TO PAGE 184, PLEASE)

Overhauled Procedures Cut

ENGINE OVERHAULS

Standardized equipment, improved driver training procedures, four daily in-and-out vehicle inspections, a 72-item 1500-mile PM check are four of six new procedures

A FEW YEARS AGO, in the management of the delivery fleet for the 15 Goldblatt department stores in the Chicago area, it was assumed that the individual power units of this fleet would require a complete shop overhaul at 45,000 to 50,000 miles. But, today, due to changes made in our operating equipment and our maintenance methods, we have doubled these shop overhaul periods to around 90,000 to 95,000 miles.

Six Contributing Factors

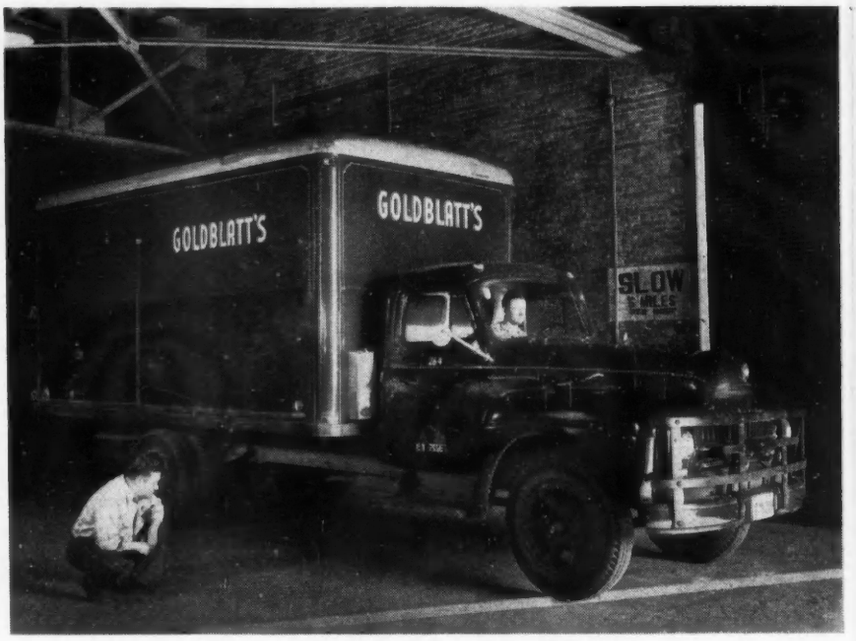
LOOKING back, we realize that this large increase in overhaul mileage has been due to a variety of changes, gradually developed. Following, are the most important of these changes:

1. Motor equipment standardized.
2. All drivers start as helpers.
3. Daily in-and-out inspections.
4. At 1500 miles, 72-item servicing.
5. Prompt aid for road failures.
6. Personal office files for drivers.

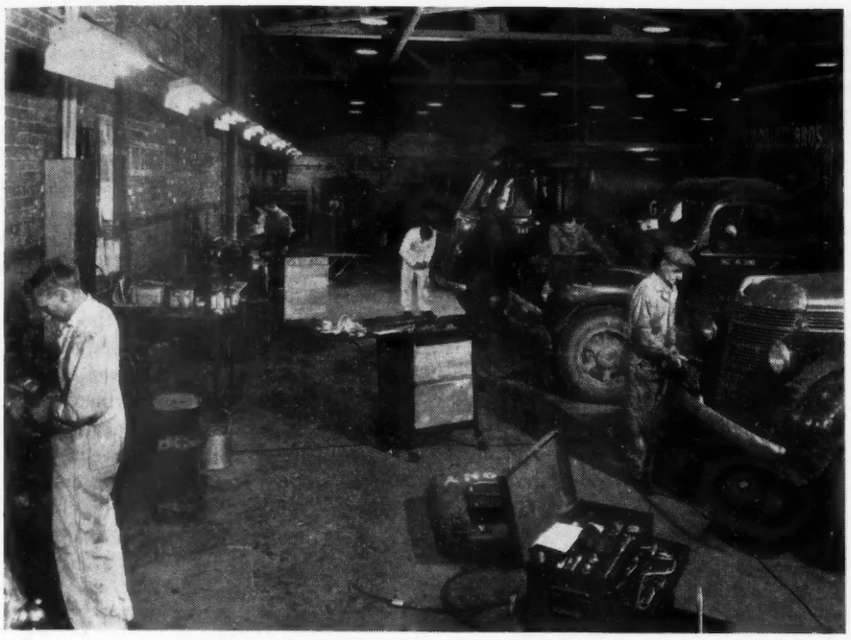
For deliveries to and from the 15 Goldblatt department stores, we have about 200 motor units of all kinds. Eleven of the stores are widely distributed in the Chicago metropolitan area; and the additional four are located respectively in the nearby smaller cities of Joliet, Hammond, Gary, and South Bend. The largest store, centrally located on State Street within the Chicago business Loop, has some exclusive special sales which thus require area-wide customer deliveries.

Each business day, all parcels for customer deliveries in the entire Chicago area first are assembled at our large new building, which covers a city block and is centrally located. In addition to being city headquarters for our customer deliveries, this building also combines the facilities of a furniture warehouse and our new garage and service shop.

For deliveries from this building, and also from one additional company warehouse, we have 40 metro-type trucks which cover 55 different Chicago-area routes. These deliveries are made daily up to 40 miles, and twice a week up to 60 miles or more. In addition, we have 39 furniture vans which cover 18 furniture routes.



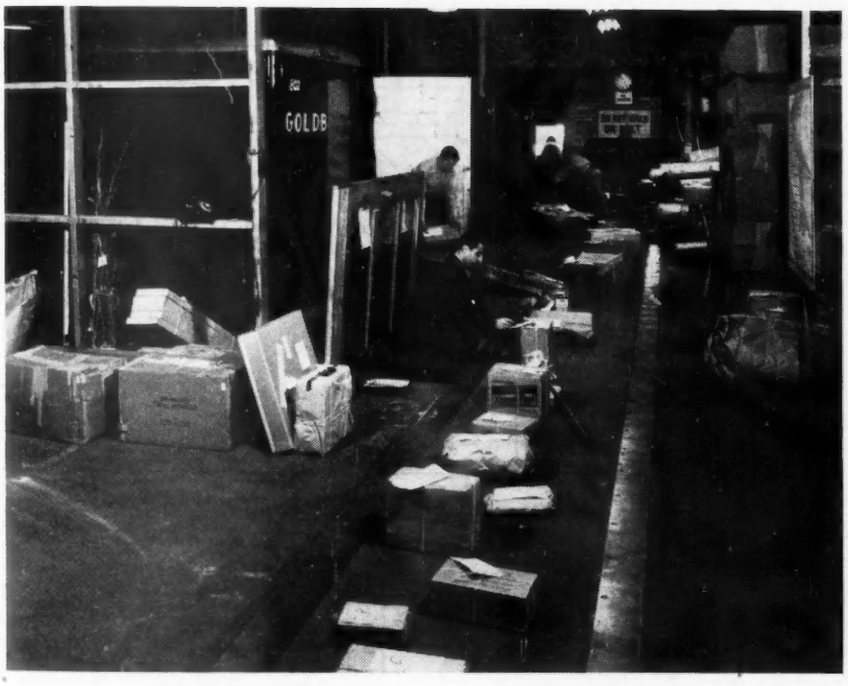
This is how 1½-in. angle iron is used for quick but effective checks, tire spring condition and load distribution



By Nick J. Simon

Superintendent of Fleet and Deliveries
Goldblatt Bros., Inc., Chicago

Five years ago the shop was rushed to keep up with basic maintenance. Today, there is less hurry and a much better quality maintenance job; major overhauls last twice as long. Shown below is loading platform close to the shop



Standardization Aids Mechanics

THE complete standardization of our fleet, begun about five years ago, especially has helped each of our five shop mechanics to develop into an all-around maintenance man.

The company program to standardize all motor equipment, has enabled our management to keep the shop inventory of replacement parts down to a comparatively low total investment. However, this parts supply is ample for current needs.

When we need a new vehicle, we rely on the manufacturer's representative to assist us in making a careful analysis of this need. Our trend has been toward greater load capacities to reduce the cost of moving heavy commodities, such as groceries.

The one recent exception to our planned standardization of trucks came from the need of several additional c.o.e. trucks for our Hammond-Gary garage, where short turning to and from the platform are required.

Specialization also has been aided by a program of get-together shop talks and study periods for an hour or more every two weeks. These talks are conducted by Shop Supervisor Frank Marek, who has worked in our shop for 22 consecutive years, with the exception of an absence period during World War II. For the past three years, Marek has been shop supervisor.

(TURN TO NEXT PAGE, PLEASE)

For delivery of heavy appliances, there are five larger trucks with hydraulic rear-platform lifts which operate with three-man crews. There are nine bakery trucks with insulated bodies, and five half-ton panels to service television sets.

We also have 17 tractors, supplemented by 60 trailers of 24-ft length, and 10 of 32-ft length. Such a tractor-trailer combination, after a store delivery of merchandise or supplies, may pick up another trailer loaded with customer parcels, which then is pulled back to the city delivery headquarters.

. . . Engine Overhauls

Continued from Page 65

During these shop get-together periods, the group may inspect a mechanical change in a new model of truck, and then supplement the inspection by the careful reading of any pertinent new manufacturer's descriptive bulletin. In addition, they discuss their most troublesome current shop problems.

When the occasion arises, the men also give time to examination and demonstration of added new units of shop servicing equipment. A fairly recent instance was the shop setup of new equipment for front-end alignment testing. To develop complete familiarity in its use, there was conducted in the shop a five-day "school of instruction"—one day for each of the five company shop mechanics.

As a special group activities example, some time ago Supervisor Marek attended, at company expense, a three-day school offered by the Perfect Circle Corp. There he passed written tests to earn the certificate of "doctor of motors." Following his return, the course was reviewed during get-together shop periods; each of the five shop mechanics likewise earned "passing grades" in the 75-question written test which they also took.

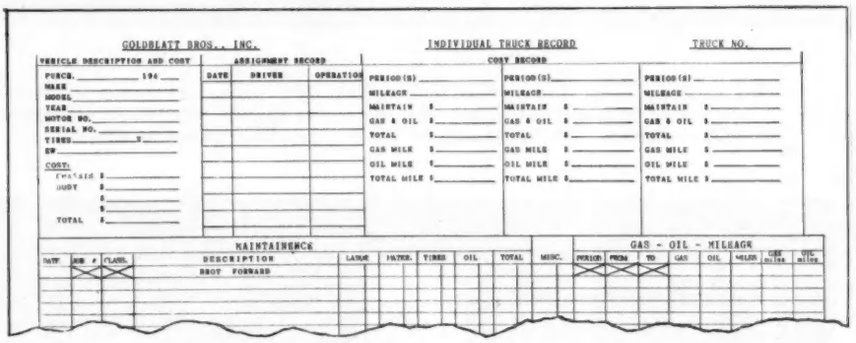
Drivers Start as Helpers

WE NATURALLY have given special attention to the road operations of our trucking units. This has included an intensified program in new driver selection and training.

A new applicant must be at least 21 years old. He must have a chauffeur's license, and at least one year of operating experience with a vehicle similar to the type for which hired. But, first, he is hired as a helper, with the expectation that within two months to a year we can advance him to driver.

This is the pre-employment procedure: The applicant is interviewed; his accident experience checked; he is given written tests in "Traffic and Driving Knowledge" and "Siebrecht Atti-

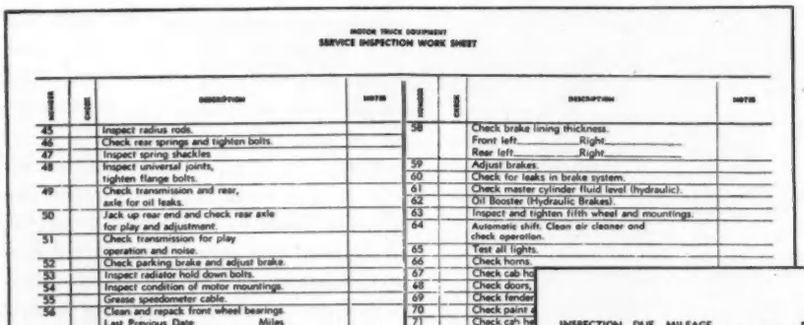
(TURN TO PAGE 198, PLEASE)



GOLDBLATT BROS., INC. — INDIVIDUAL TRUCK RECORD — TRUCK NO.

VEHICLE DESCRIPTION AND COST | ASSIGNMENT RECORD (DATE, DRIVER, OPERATION) | COST RECORD

MAINTAINENCE (DATE, JOB #, CLASS, DESCRIPTION, LABOR, PAINT, TIRES, OIL, TOTAL, MISC.) | GAS - OIL - MILEAGE (PERIOD, FROM, TO, GAS, OIL, MILES, CUM. miles, VEH. miles)



MOTOR TRUCK EQUIPMENT
SERVICE INSPECTION WORK SHEET

NUMBER	CHECK	DESCRIPTION	NOTES
45		Inspect radius rods.	
46		Check rear springs and tighten bolts.	
47		Inspect spring shackles	
48		Inspect universal joints, tighten flange bolts.	
49		Check transmission and rear, axle for oil leaks.	
50		Jack up rear end and check rear axle for play and adjustment.	
51		Check transmission for play operation and noise.	
52		Check parking brake and adjust brake.	
53		Inspect radiator hold down bolts.	
54		Inspect condition of motor mountings.	
55		Grease speedometer cable.	
56		Clean and repack front wheel bearings. Last Previous Date Miles	
57		Clean and repack rear wheel bearings. Last Previous Date Miles	

NUMBER	CHECK	DESCRIPTION	NOTES
58		Check brake lining thickness. Front left Right Rear left Right	
59		Adjust brakes.	
60		Check for leaks in brake system.	
61		Check master cylinder fluid level (hydraulic).	
62		Oil Booster (Hydraulic Brakes).	
63		Inspect and tighten fifth wheel and mountings.	
64		Automatic shift. Clean air cleaner and check operation.	
65		Test all lights.	
66		Check horns.	
67		Check cab ho	
68		Check doors,	
69		Check fender	
70		Check paint	
71		Check cab ho	
72		Check fire ex Last checked	

NEW	ASSEMBLY EXCHANGED	UNIT	NO.	DATE	MILES

MECHANIC TIME INSPECTO
MECHANIC TIME SUPERVIS

This is the master record form, 13 x 14 in., one of which is used for every truck. Its maintenance history aids in determining repairs at inspection time

SERVICE INSPECTION WORK SHEET

INSPECTION DUE MILEAGE DATE

TRUCK, TRAILER,
TRACTOR NUMBER
DATE PERFORMED
SPEEDOMETER READING

NUMBER	CHECK	DESCRIPTION	NOTES
1		Air Cleaner, Breather Tube and Breather Cap. Remove and clean.	
2		Carburetor—remove plugs and blow.	
3		Belts, Air Compressor and Fan. Inspect and adjust tension.	
4		Inspect and fill radiator, and check cooling system for leaks.	
5		Tighten Water Pump Gland Nut and Hose Connections if necessary.	
6		Tighten Cylinder Head, Manifold, Governor and Carburetor Flange Bolts.	
7		Remove Spark Plugs—clean, set and test.	
8		Check compression with throttle open and engine warm. 1 2 3 4 5 6 Previous Present	
9		Check Flare Pots and refill.	
10		Check Generator Brushes and clean Commutator if necessary. Check Generator mounting and Pulleys for looseness.	
11		Storage Battery. Hydrometer reading 1 2 3 Battery capacity Cranking voltage	
12		Check Distributor resistance and point condition.	
13		Check Distributor dwell angle. Adjust if necessary.	
14		Check timing with timing light	
15		Inspect Ignition, Starter and Generator connections.	
16		Check Starter Brushes and Commutator.	
17		Check Generator and Voltage Regulator. Output Cut-out Voltage	
18		Check Coil.	

NUMBER	CHECK	DESCRIPTION	NOTES
19		Check Condenser. Capacity MFD Resistance Insulation	
20		Drain and clean Fuel Pump Bowl and Carburetor Strainer	
21		Check Fuel Pump. Vacuum Pressure	
22		Remove drain plugs from fuel tanks to drain water and dirt.	
23		Inspect fuel system for leaks.	
24		Warm up motor thoroughly.	
25		Check operation of Manifold Heat Valve.	
26		Check operation cooling water thermostat.	
27		Check and record oil pressure hot. At Idle Speed At Maximum Speed	
28		Check and record generator charging rate. At Maximum Speed	
29		Air Brake cut-out pressure. Lbs.	
30		Heat Indicator reading	
31		Check all gauges and instrument lights.	
32		Adjust valves.	
33		Check governed speed and adjust.	
34		Check idle speed and adjust idle with vacuum gauge and combustion meter. Idle speed Vacuum Mixture	
35		Check and adjust Clutch Pedal.	
36		Drain Air Tanks.	
37		Flush Cooling System. Previous Date	
38		Check Front Wheel Bearing adjustment. Inspect Steering Knuckle Pins for looseness.	
39		Tighten Front Spring U Bolts.	
40		Inspect Steering, check play in Wheel.	
41		Inspect Drag Link, Tie Rod and Steering Arms for looseness or out of alignment.	
42		Tighten all Wheel Nuts.	
43		Check Rear Wheel Bearing adjustment.	
44		Tighten Axle Shaft Nuts or Flange Bolts.	

Above and at right are shown two sides of 8½x11-in. form for the 1500-mile inspection which has played an important part in improved fleet condition

Not only does the present tire situation make it necessary to step up tire maintenance but, to cut costs, fleet maintenance men should get management aid to make drivers tire conscious

Analysis by A. W. Greene
Managing Editor, Commercial Car Journal

SURVEY NO. 22

PART 4

DRIVER ABUSE
Causes Premature Tire Failure

THIS STUDY of tire performance is intended to show why tires fail in service. It is divided into two parts: Causes of Tire Road Failures and Reasons for Premature Tire Failures. Properly studied and applied, both of the accompanying tables constitute a key to tire longevity and lower tire costs.

Road failures should be considered first because, conceivably, even a new tire can give trouble in the first mile of its use for reasons beyond the manufacturer's control.

Table 1 shows that the three principal causes of tire road failures are punctures, driver abuse and blowouts. Ironically, the

What is the Principal Cause of Tire Road Failures?

Table 1

Of all causes reported by 184 fleets, punctures tops list with national average of 19.3 per cent. Driver abuse tallied second, blowouts came third

VOCATIONAL GROUPS	Total Number of Fleets Reporting	Causes of TIRE ROAD FAILURES — — Per Cent (Median) Puncture	Driver Abuse	Blowout	Poor Roads	Leaking Valves	Overloading	Improper Tire Pressures (Over and Under)	Speeding	Others
For-Hire Carrier	22	25	10	20	20	7	15	10	10	10
Food Distribution	46	30	13	14	16	5	10	8	10	10
Government	33	20	20	10	25	5	20	20	15	20
Construction and Mining	3	30	35	12	20	5	10	5	—	—
Industrial	7	25	30	20	25	12	40	12	10	2
Petroleum	9	50	10	20	20	4	15	5	5	15
Public Utility	31	50	15	10	17	5	10	8	12	70
Retail Delivery	16	75	20	25	30	8	20	22	—	30
Truck Rental	4	8	22	5	8	3	30	5	15	—
Bus Fleets	13	90	17	2	35	2	—	1	—	25
TOTAL AND AVERAGE ALL VOCATIONAL GROUPS	**184**	19.3%	16.5%	15.7%	**14.0%**	10.0%	**9.7%**	8.4%	**3.3%**	**3.1%**

driver is in the middle. Better driving practices could get him out. Even punctures, usually blamed on bad luck, could be greatly reduced if a driver were more careful of road conditions; more particularly where he parks his vehicle. Blowouts, too, are not necessarily "acts of God." Driver abuse must take some blame.

Incidentally, while the base figures in the table represent per cent medians, the averages for all vocational groups represent actual averages of total failures reported; it being impractical to work out medians on a national basis. The medians show how the individual vocations are affected, while the national averages give the relative frequency picture.

Lack of space prevents further comment but Table 1 also shows that the shop has a big opportunity to do a better job in preventing tire road failures. The frequency percentage of leaking valve and improper pressure occurrence almost add up to puncture frequency.

Tires Literally Cut to Pieces

FLEET analyses of reasons for premature tire failure are shown in Table 2. Frankly, most all reasons could be summed up as ABUSE. Not only the first, but the first two reasons indicate that the majority of truck and bus tires are literally cut to pieces and, thus, don't get a chance to wear out.

While the Table shows only seven columns of reasons, many more were supplied. However, nothing is lost by this omission because the others are merely "more of the same." Driver abuse certainly shows up strongly behind most of the reasons shown.

It is to the credit of CCJ's Board of Experts that only one or two placed any blame upon the manufacturer—and it is conceivable that they could have had some legitimate complaints—but even those were at the very bottom of the list.

The solution to tire failures is clear: REDUCE ABUSE.

What is the Leading Reason for Premature Tire Failure?

Table 2

The leading reason is Tread Cuts. This cause got first and second place, according to frequency. This and other reasons traceable to driver abuse

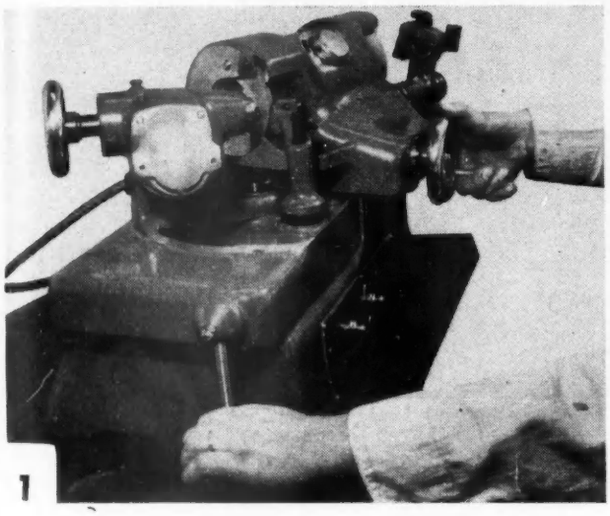
VOCATIONAL GROUPS	Total Number of Fleets Reporting	Reasons for PREMATURE TIRE FAILURE, According to Frequency						
		First	Second	Third	Fourth	Fifth	Sixth	Seventh
For-Hire Carrier	22	Tread Cuts	Damaged Sidewalls	Damaged Sidewalls	Repair Failure	Ply Separation	Damaged Tread	Radial Cracks Bead Failure
Food Distribution	46	Damaged Sidewalls	Tread Cuts	Damaged Tread	Repair Failure	Under Inflation Radial Cracks	Ply Separation	Repair Failure Ply Separation
Government	33	Damaged Sidewalls Tread Cuts	Tread Cuts	Under Inflation	Under Inflation	Radial Cracks	Brake Impact	Repair Failure
Construction and Mining	3	Damaged Sidewalls Tread Cuts	Damaged Tread	Ply Separation Bead Failure	Brake Impact	Bead Failure Ply Separation	Repair Failure	Radial Cracks
Industrial	7	Damaged Sidewalls Tread Cuts	Tread Cuts	Damaged Tread	Under Inflation	Brake Impact	Repair Failure	Ply Separation
Petroleum	9	Tread Cuts	Damaged Sidewalls	Brake Impact Damaged Tread Ply Separation	Repair Failure	Damaged Tread	Radial Cracks Repair Failure Tread Cuts	Under Inflation Bead Failure Damaged Sidewalls
Public Utility	31	Tread Cuts	Damaged Sidewalls Ply Separation	Damaged Tread	Ply Separation Damaged Sidewalls Under Inflation Repair Failure Damaged Tread	Ply Separation Radial Cracks	Ply Separation	Bead Failure
Retail Delivery	16	Tread Cuts	Damaged Sidewalls Ply Separation	Brake Impact	Repair Failure	Brake Impact Under Inflation Damaged Tread Bead Failure	Radial Cracks	Bead Failure
Truck Rental	4	Damaged Sidewalls	Brake Impact	Damaged Sidewalls Damaged Tread Repair Failure Tread Cuts	Repair Failure Ply Separation	Under Inflation Damaged Tread	Bead Failure	Damaged Tread Repair Failure
Bus Fleets	13	Damaged Sidewalls Tread Cuts	Tread Cuts	Damaged Sidewalls	Brake Impact Under Inflation Radial Cracks	Ply Separation Bead Failure Radial Cracks	Brake Impact Ply Separation	Repair Failure
TOTAL AND FREQUENCY ALL VOCATIONAL GROUPS	184	Tread Cuts	Tread Cuts	Damaged Tread	Repair Failure	Radial Cracks	Ply Separation	Repair Failure

Composition of Vocational Groups as Used in the Accompanying Tables

FOR-HIRE CARRIER—Motor Freight Carriers in Local and Over-the-Road Service.
FOOD DISTRIBUTION—Bakery, Dairy, and Other Food Product fleets.
GOVERNMENT—State, County, Municipal, and Federal fleets.
CONSTRUCTION AND MINING—Building, Mine, Quarry, and Gravel fleets.
INDUSTRIAL—Fleets operated by manufacturers.
PETROLEUM—Production and Distribution fleets.
PUBLIC UTILITY—Gas, Power, Water, and Telephone fleets.
RETAIL DELIVERY—(Other than Food Products) Dry Cleaning, Laundry, Newspaper, Coal, Ice, Department Store, Beverage fleets.
TRUCK RENTAL—Agencies leasing motor trucks.
BUS FLEETS—Passenger carriers, local and intercity.

CCJ MECHANIC RETRAINING GUIDE

No. 3—How to Grind a Valve



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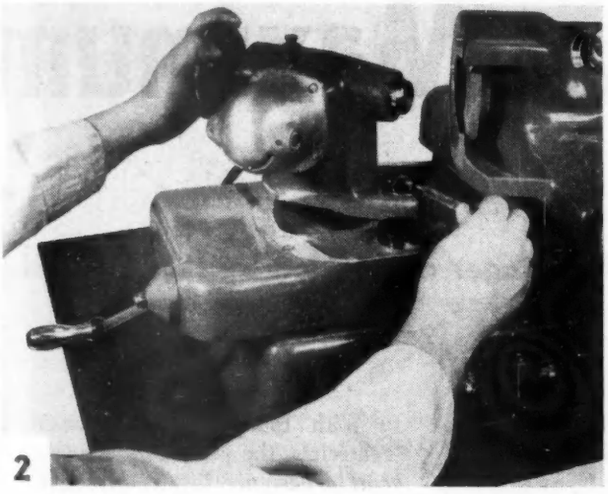

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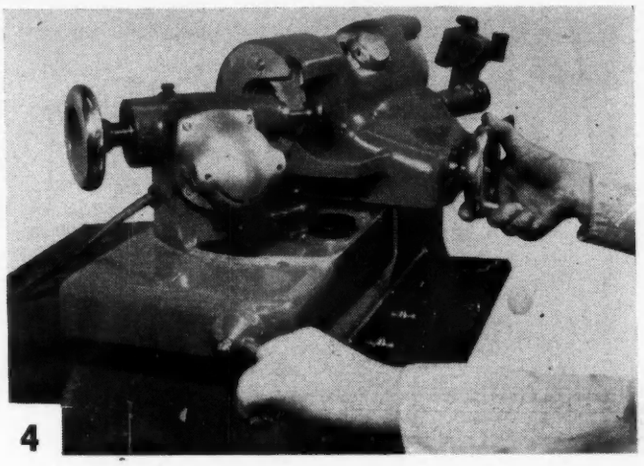


4

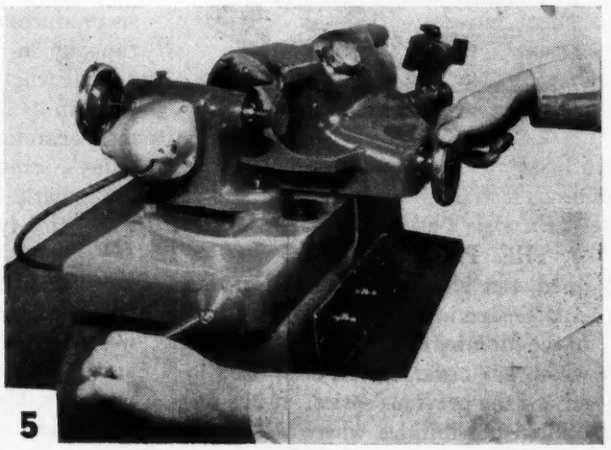
1. Dressing the wheel. Wheel is dressed to the same angle, parallel to work head travel on this refacer. Wheel head it set permanently at 20 deg offset to clear valve stems and permit traverse grinding for any valve face angle.

2. Setting the work head to the desired angle. The segment or slide on the work table is accurately calibrated for all popular angles including 90 deg. Here nut is being loosened before setting work head. Nut must be retightened.

3. Chucking the valve stem. The collet is loosened with left hand at hand wheel. Stem is inserted until the wear mark caused by travel in the valve guide is even with the front edge of the collet. Then hand wheel is retightened.

4. Grinding the valve. Work head and wheel head switches are turned on. Right hand turns wheel head handle to move wheel up into valve for no more than .004 cut at this time. With left hand work head handle is turned back and forth as soon as contact is made between valve and wheel. Full valve face should be in contact with wheel at all times.

5. Grinding flat type valve. In this operation valve is traverse ground as outlined in paragraph 4 above.



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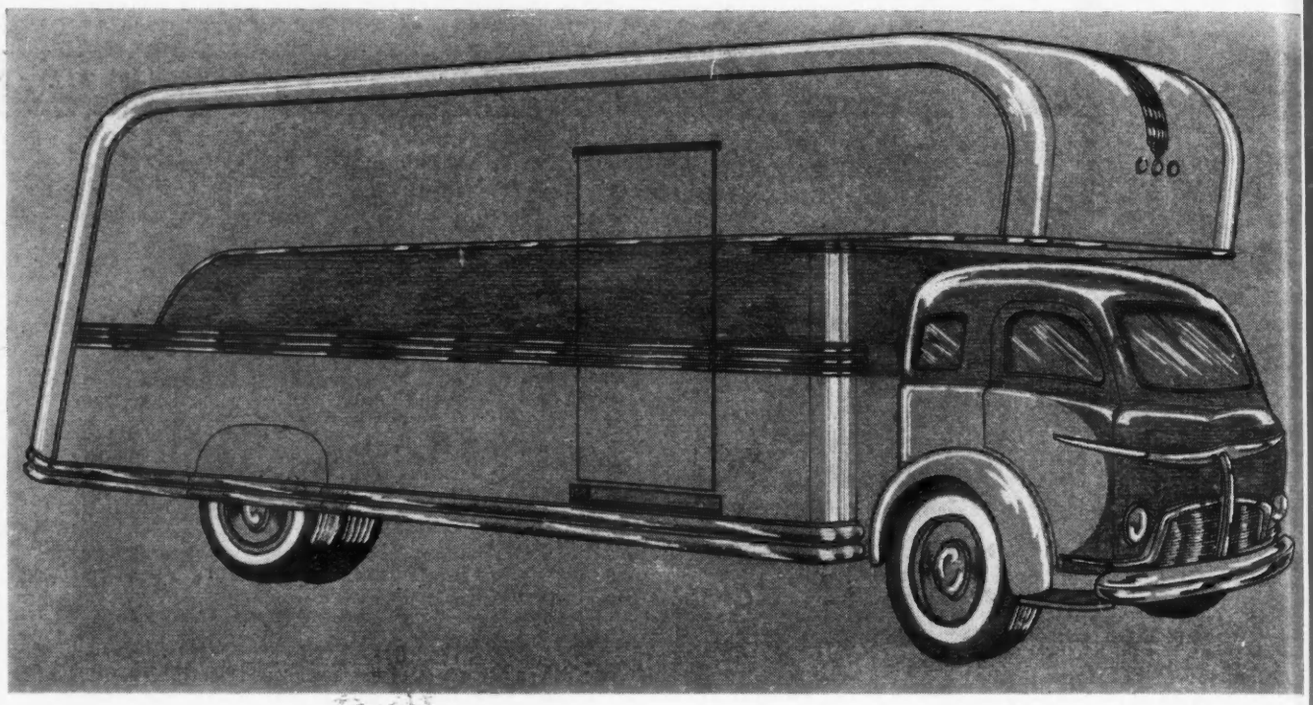
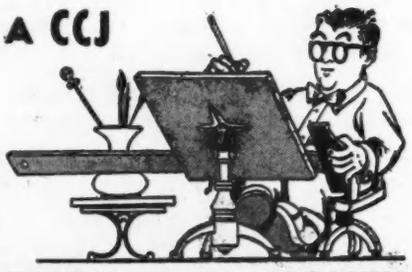


Streamlined Van Provides Maximum

Many other custom features and economy advantages are gained by this attractive



THE PEAKED-NOSED streamlined van shown in Fig. 1 for the sixth design in this series of the Body-of-the-Month represents a body type which has never before been used in any of the previous series. It has unlimited possibilities where streamlining and economical use of prefabricated parts and special body equipment is involved.

With basic chassis types available today, which were never before available, this type body in combination with these newer more modern chassis produces a unit of maximum cubic capacity in an absolute minimum of overall length. This is a very strong point in its favor and should be given most careful consideration due to today's crowded traffic conditions; particularly in the metropolitan areas where this type body is used most.

Prior to the availability of prefabricated body structural sections and sheet metal, bodies of this design were for the most part square, boxy and unattractive. To get better appearance, the more expensive of this type body was built as an integral body and cab unit.

With today's available standard materials, the peaked-nose type body can be designed just as attractively as the body and cab type at a very much lower cost. Moreover, it has the added advantage, and an important one, that it can be remounted on a new chassis at a very minimum cost, as compared with the other type body.

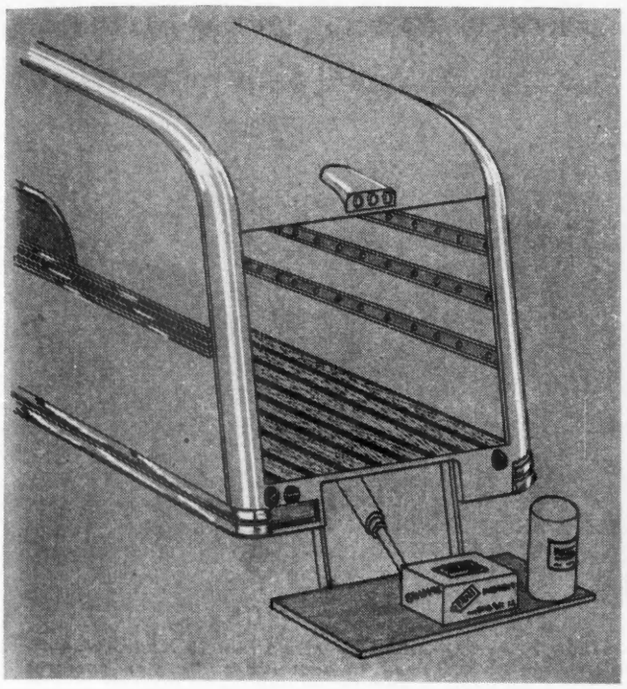
Further, this type body has many uses where large cubic capacity is required to transport bulky but light loads. Among these uses, it is at its best advantage in moving and warehousing operations, furniture delivery, intercity parcel delivery, etc.

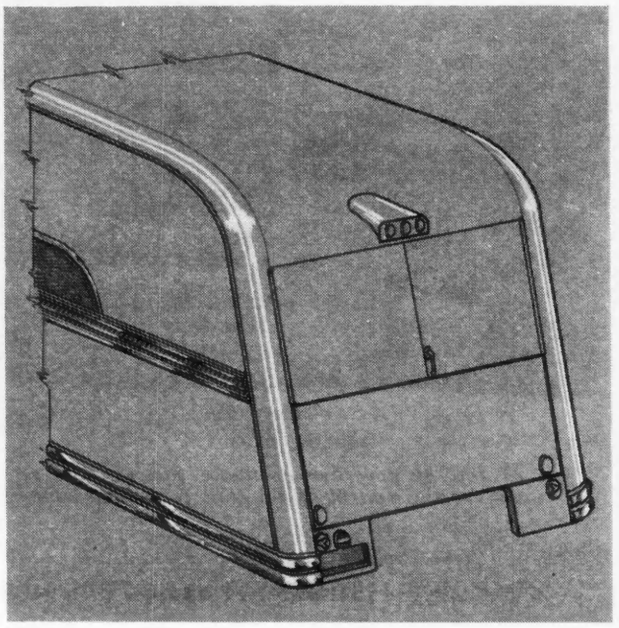
Appearance Features

IN THIS design, full advantage is taken of prefabricated sheet metal parts, molding treatment, and two-

DESIGN No. 6 of No. 3 Series

By E. M. Westberg





Payload

cab and body design using prefabricated parts

toned color combinations to accomplish a number of important points relative to appearance. Readily available sweeping streamlined roof cove panels are used at both front and rear ends to effect a streamlined appearance. In addition to this, the front of the forward peak section is slanted forward to inject a feeling of forward motion.

The usual problem in this type design, where height creates a rather awkward appearance, is solved by the very generous use of horizontal molding. These moldings are further emphasized and accentuated by the use of a double streamlined rubrail and a multiple bank of belt line moldings. These, along with the long, sweeping molding carried back from the peak, all tend to emphasize length.

To better blend the body into the modern chassis, a two-toned color scheme is used, sweeping one color common to both cab and body from the front bumper back almost the full length of the body.

Built-in Tailgate Lift

IN THE rear, where a mechanical or hand-operated tailgate would be of considerable advantage for the type of loads handled, the center portion of the rear skirt is left open to accommodate the gate mechanism. Panels are provided on both sides of this open area for lights, license plates and built-in directional signals.

Two views of the rear are shown. Fig. 2 shows arrangement for the built-in tailgate lift (rear doors have been eliminated for convenience of illustration), and Fig. 3 shows neat and trim lines when the doors and tailgate are in the closed position. The tailgate is paneled to cover what is rather ugly framing structure on this type gate. This is not a difficult task and greatly improves the appearance of the gate.

Of course, where neither the mechanical or hand-operated automatic gates are used, this center portion could be treated in a number of ways. It might be recessed for a full-width step with provisions for built-in lights, or it might be paneled solid with a door in the center for a spare tire or access to skid boards which might be stored between the longitudinal rails.

Fig. 2 also shows some inside details. On the right side, prefabricated belt line rails permit an almost unlimited number of load tieing points throughout the body. For inside lining, either slats or steel or wood may be used; solid plywood or a combination of plywood and slats also may be used.

Another of the prefabricated items shown are the metal wear strips on the wood floor joints.

The rear views also show that the usual bank of three marker lights are provided with a streamlined housing.

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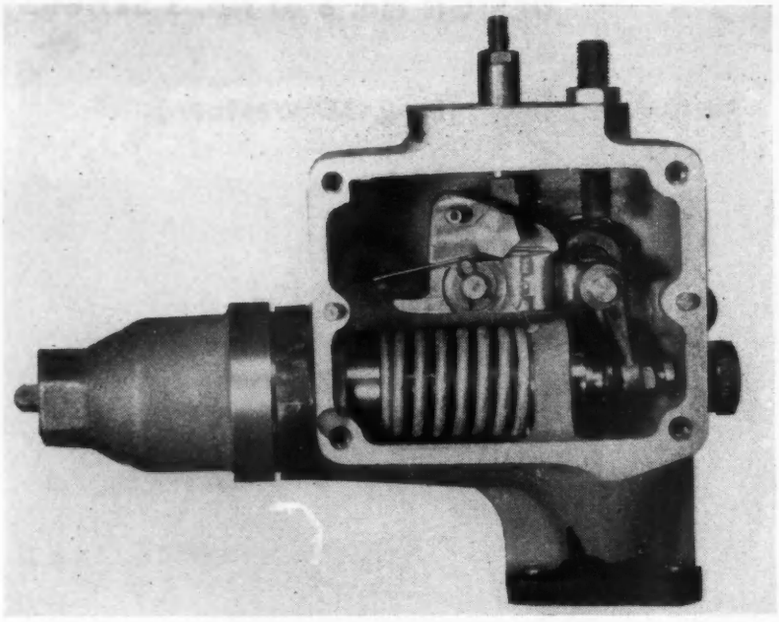
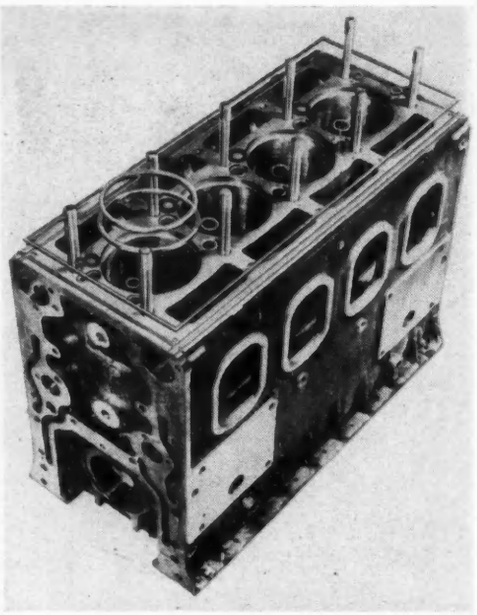


View of top of governor assembly shows detail of spring-actuated control of the new fuel moderator



Perspective view shows rings, gaskets, used to seal oil and water passages

1951 GM 4-71 and 6-71 Diesel Engines Comparative Performance Data

Model	*4-71*			*6-71*		
Year	1945	1950	1951*	1945	1950	1951*
Bhp (max)	110	133	150	165	20[illegible]	225
Bhp (net)	96	118.5	134	148.5	184.5	208
Weight per Bhp			9.8 lb.			9 lb.

* Governed speed 2100 rpm; formerly 2000 rpm.

GM DIESELS Boast New Power

The 4-71 and 6-71 "Million Milers" now rated at 150 and 225 Bhp.

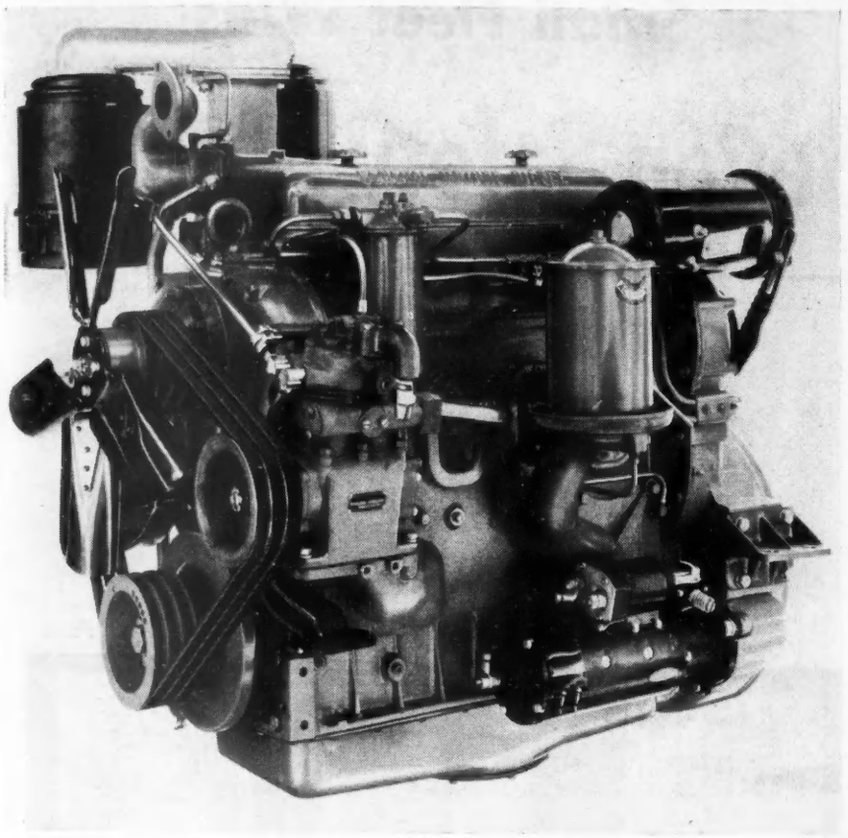
GM TRUCK & COACH DIV., General Motors Corp. has announced improvements in the 4-71 and the 6-71 diesel engines, designed to boost power and economy and reduce maintenance costs. Known as the "Million Milers" because of their unusual life expectancy, the new 4-71 will be standard on Series 650, 740 and 750 models, while the 6-71 will be installed in Models 900 and up.

The 4-71 is now rated at 150 maximum Bhp, while the 6-71 develops 225 Bhp (max) at a governed speed of 2100 rpm. Weight Bhp ratio has been reduced to 9.8 lb in the smaller engine; 9 lb in the 6-cylinder engine.

Improvements have been effected without obsoleting existing engines or parts and without affecting interchangeability of major parts of new or old engines. Thus a new head can be installed on an old block, providing a gasket is employed; and other net parts can be installed in an old engine. The new engines are expected to show lower maintenance costs and less need for overhauls due to a substantial reduction in engine deposits.

A "fuel moderator" built into the self-contained governor assembly controls the amount of fuel injected into the cylinders at speeds below 1500 rpm. This change will enable GMC to recommend its diesel trucks for low-speed city delivery service for many vocational applications.

By preventing an excess of fuel under low speed conditions when blower output is reduced, the fuel moderator is said to improve fuel economy, aids in reducing smoke and



Left hand view of the 4-71 showing filter, air compressor, and accessory locations

and Performance

New fuel moderator improves fuel control

engine deposits. Air-fuel ratio is maintained at an optimum at all times to promote good combustion without smoke.

With the improved governor control, injector capacity has been increased from 70 cu. mm. to 80 cu. mm. Incidentally, the moderator is so designed as to provide a standard regulation of fuel supply regardless of throttle position, hence independently of the driver.

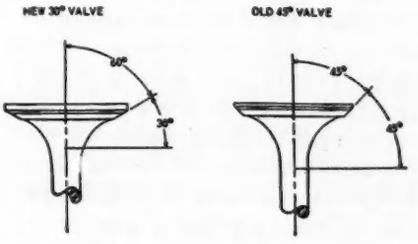
An improvement of some 6 per cent in fuel economy at speeds above 1500 rpm is effected by the new camshaft which holds valves open for 170 deg. as compared with 160 deg. The overall effect is to improve scavenging and breathing, up fuel economy, and decrease smoke.

Greater life and freedom from the usual maintenance problems are said to be imparted by a long list of design improvements. For one thing the cylinder head gasket has been eliminated by grinding the mating faces of cylinder heads and block. The cylinder head is more rigid and less subject to deflection through increased wall thickness and development of heavier ribs and struts. Similarly, the cylinder block has heavier walls, heavier top deck, and stud bosses extended downward with longer thread engagement.

With the elimination of the gasket, GMC provides synthetic rubber rings and strip gaskets to seal water and oil openings. Cylinder liner counterbores in the top of the block are deeper and carry steel inserts to facilitate seating of the liner. Belleville washer assembly ring seats on individual liners seal the combustion chamber.

The new, stronger, more rigid crankshaft is heat treated and boasts Tocco-hardened journals and pins, features roll-burnished fillets after grinding, and peened oil holes.

Heavy-duty precision type copper lead bearings are used for both main and connecting rod bearings. Bearings have a new and heavier lock screw for improved retention.



A comparison of new and old types of valves. New 30-deg seat angle exhaust valves reduce pounding of the face at the higher engine speeds. A new 170-deg camshaft provides for freer breathing, improves cylinder scavenging and fuel economy at speeds above 1500 rpm

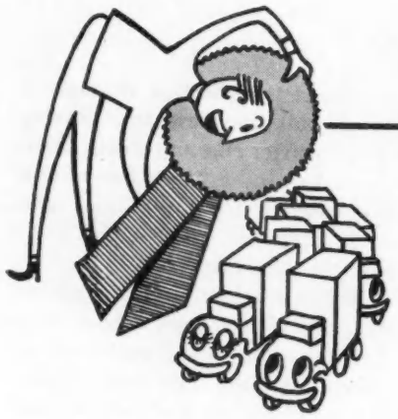
Longer life has been imparted to exhaust valves by Stellite-facing and by changing the seat angle to 30 deg. —from the former 45 deg.—thus reducing valve pounding at the higher speeds.

Both the No. 1 and No. 2 piston rings now are chromium-plated for increased life. Oil control rings of heavy-duty type have been adopted and are said to reduce oil consumption to one-third of previous experience.

By L. T. Bruhnke

Small Fleet Wins

Seven Safety Awards



Driver cooperation and team work stressed in unique, highly successful safety system

TO WIN AN AWARD in a state safety contest is a commendable honor. Should a fleet win seven consecutive awards, it becomes an excellent accomplishment. But when that fleet achieves this honor without a formal safety program and without an appointed safety executive, it becomes an outstanding achievement.

Badger Lines of Milwaukee, Wis., has done just that; won honors for safety from the Wisconsin State Motor Vehicle Dept. seven years in a row. Comparatively, it is a small fleet, operating 20 tractors, 18 trailers plus two hired owner-driver combinations. Badger operates in Wisconsin and Illinois, also serving a few of the river towns in Iowa and Missouri. The major cargo is straight loads of beer, occasionally some fertilizer, bottles, boxes, and cement; with return loads to Milwaukee consisting largely of empty beer containers.

When D. V. Carey, president of Badger, was first asked about the reason for this remarkable safety record, there did not seem to be much of a safety program. They had some meetings, but not many. The drivers completed a daily truck report, but that was about all the writing they did. There isn't any special training program or selection of drivers by psychological tests.

Yet Carey seems to have a program all his own, based on a fundamental understanding of the trucking business, its problems, and an understanding of applied psychology.

Six of the seven awards received by Badger Lines are represented in this frame which hangs in a prominent spot as a reminder for continued effort

Team Work Stressed

BASIC in the Carey system at Badger is the importance placed upon the truck driver as an individual, with ability to assume responsibility and at the same time work together with other drivers and his superiors as a closely knit team. Carey feels that a trucking organization to be effective must be like an athletic team, with each man putting forth his best effort.

He has found, however, that all men can't work together. Two men who are tops in their field may not be able to get along. Carey feels that some drivers who can't get along with him, may be able to perform ably for someone else. If a man doesn't seem to be able to get by, steps are taken with the union to transfer him to another job. It is all done on a friendly basis of explaining the ideas to all concerned.

On the other hand, Carey does not always refuse to hire a man on the strength of a doubtful recommendation. He feels that the man may not have been able to get along with his former employer and he may be a good man for Badger to employ.

For example: One Badger employee was a good driver, but was convinced that he should find another job because he seemed entirely oblivious of the condition of his truck. He was a good driver. He had excellent customer relations, and he delivered the goods promptly and efficiently. However, Badger's shop does not have a dynamometer or personnel to test

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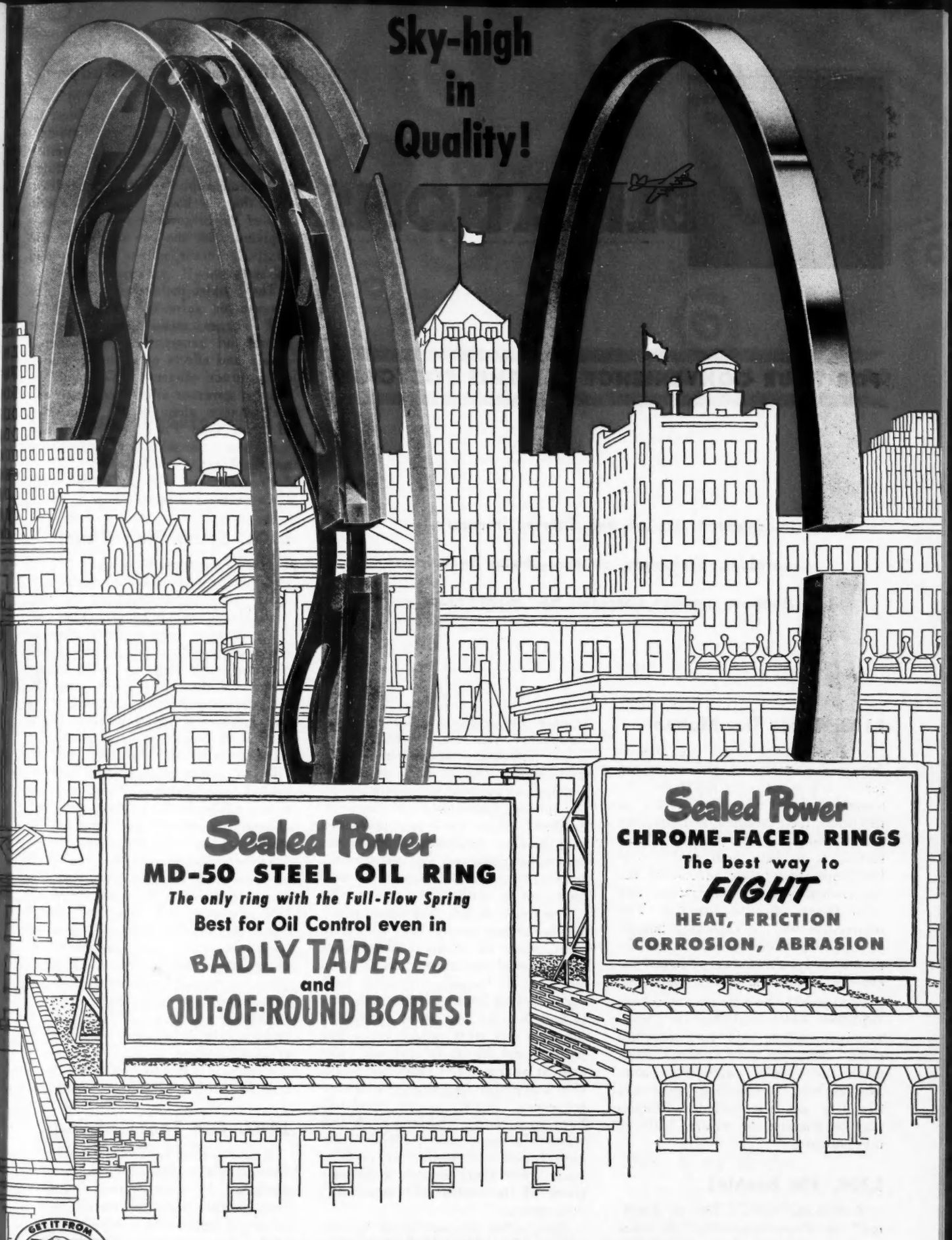

GET IT FROM YOUR JOBBER

SEALED POWER CORPORATION, MUSKEGON, MICHIGAN

Sealed Power Piston Rings

BEST IN NEW TRUCKS! BEST IN OLD TRUCKS!

FREE PUBLICATIONS

FOR YOUR CONVENIENCE USE THIS POSTCARD

A selected list of the latest literature—catalogs, pamphlets, charts—chosen to help fleetmen improve operation and maintenance.

L103. Truck Tire Manual

A new 38-page truck tire manual featuring pointers on tire care and service is now ready for the trade. The manual includes a special section on tire terms, their meaning, and how they are determined. The purpose of this section is to help both dealers and truck operators better understand the fundamentals of tire construction and other factors affecting tire life. This information will be especially helpful to truck operators forced to use inexperienced maintenance personnel because of present manpower shortages.

The manual also tells how to correct conditions which contribute to premature tire failure and increased tire costs. Hints on good driving habits, truck tire repairs, wide base rims, load analysis, specification tables and tire data are also included. Copies may be obtained by writing L103 on the postcard.

L104. PM Booklet

A booklet, "GMC's Tips to Truckers," is being distributed to truck owners by GMC dealers to help them prevent breakdowns and costly delays in their operations. The booklet lends valuable advice on preventive maintenance for trucks. GMC engineers recommend that an inspection of a truck undergoing severe service be made every 1000 to 5000 miles, depending on the type of service or, on low mileage units, every 30 days. A detailed check list for preventive maintenance recommends that the chassis be lubricated, and many points examined for wear, looseness, or misalignment.

The book makes homespun parallels in urging proper care of equipment, such as asking: "What does 'clutch pedal free travel' mean? Did you ever tie the dog up in the back yard thinking he was safely tied, only to find that the free travel allowed by the rope was great enough to let him get into and dig up the garden? The amount of free travel permitted in the clutch assembly may have similar consequences. Insufficient free travel will burn up a clutch, while too much free travel will not permit a complete disengagement and results in clashing gears. For these reasons a periodic check of the clutch will save costly replacements."

Many other tips are listed to convince truckers that periodic inspections and maintenance of their equipment means many dollars saved. Write L104 on the postcard for your copy.

L105. Governor Study

"How to Get The Most Out of Your Govenor" is answered in the latest issue of *Control*, a complete, up-to-date presentation of (centrifugal) governor problems and applications. Illustrated with photographs and schematic drawings, the new booklet describes operation of Pierce governing mechanisms—explains, with the use of easy-to-read charts, governor weight energies and calibrations..

The booklet includes important discussions on valve boxes, valve shafts and linkages; positioning of governor levers and geometry of connections; causes and effects of engine condition on governor efficiency. Complete details on governor adjustment, care and maintenance, along with a description of basic type Pierce governors and their uses, are also included in the new booklet.

For your free copy of *Control*, write L105 on the postcard.

L106. Spark Plug Chart

There's as much "how-to" as "which-one" included in the new Auto-Lite spark plug specification chart, now available to the industry. The wall chart features photographs showing the proper method of installing and cleaning spark plugs, gives the proper torque for tightening spark plugs, illustrates exclusive Auto-Lite accessories and includes a type-equivalent chart, as well as complete specifications for all cars from 1936 to 1951 models. "How-to" photographs, each accompanied by a simple explanation, serve as a reminder to all of the importance of removing, cleaning, gapping and installing spark plugs correctly.

The specifications in the new chart give the spark plug type and the proper gap-setting for both the Auto-Lite Resistor and Standard Spark Plugs for all American and Canadian passenger cars. A supplementary chart lists equivalent type spark plugs, while the special torque chart gives the foot-pounds pressure to be used in tightening spark plugs in aluminum and castiron heads and with various types of gaskets.

Copies of the new chart are available by writing L106 on the postcard.

L107. GM Tool Catalog

A new special service tool guide for General Motors diesel engines has been published by Kent-Moore Organization, Inc., engineers and manufacturers of special automotive service tools and equipment. The 36-page guide covers special tools for servicing the Series "71" and "6-110" G. M. Diesel. Write L107 on the postcard.

NEW PRODUCTS

FOR YOUR CONVENIENCE USE THIS POSTCARD

Illustrating and reviewing newest developments in parts, accessories, shop equipment and tools. For more information use the attached postcard.

P22. Graphite Break-In Oil

A new oil additive called Lube-Plus has been placed on the market by National Graphite Co., Inc., of New York. Containing a natural colloidal graphite, the solution is mixed with the lubricating oil in the crankcase to provide for added bearing protection. Used as a break-in oil the solution is said to aid in prevention of high initial wear.

Another product, Hydrite, contains the same colloidal graphite and is added to the coolant to lubricate the water pump in engines where lubrication problems arise.

P23. Body Undercoating

A self-sealing undercoating material has been developed by Nox-Rust Chemical Co., Chicago. It may be applied in a thinner layer than other similar materials, will cling tightly to the metal and remain pliable, providing a continuous rustproof seal, the manufacturer states. Further statements made for the undercoating indicate that a thickness of 1/16 in. is enough for complete protection, with a recommendation of twice the thickness should maximum sound-deadening be be desired.

P24. Door Opener

Doors can be operated by standard three-button remote switches, or by a remote control unit mounted on the dash of a car or truck and operated by the driver while the truck is in motion with this new system made by Robot Appliances Inc., Dearborn Mich. In the event of failure, the Robot device may be disconnected and the door operated manually. In the event of obstruction, the friction-type drive slips and the unit will not move the door until the obstruction is removed. When closed, doors operated by the system are automatically locked and may not be opened from the outside except by operation of the control device.

P25. Grease Gun

A 10,000 lb hand-operated grease gun has been produced by Aro Equipment Corp. The gun weighs 3½ lb loaded, has a spring loaded barrel and may be loaded either through a fitting or by removing the cap. The gun delivers 10,000 lb grease pressure with one-hand operation.

P26. Power Sweeper

A low-cost power sweeper has been introduced by Little Giant Products Inc. which is designed as an attachment to fit any fork lift truck of 1500 lb capacity and up. The sweeper is operated by the same operator as the lift truck. It can clean indoors and out as rapidly as 80,000 sq ft per hour, the manufacturer states. It has its own self-contained spray system for dust control. A 6.8 hp gasoline engine powers the brush which brooms refuse into a floating dust pan. The pan may be removed entirely and the rotary brush used for snow or road dirt, brushing it to one side for faster clearance.

P27. Gearshift Meter

An electrical device made by Paramount Fabricating Co. tells the driver when he should shift gears. It is attached to the dash at eye level and has three color-indicating points which bear the legend *down*, *run*, and *up*. A dial arrow advances as the engine revolutions increase until the pointer is in the "run"area. The driver attempts to keep this indicator in this area while he operates the truck or tractor in the usual manner. As he notices engine strain or changes in speed, a glance will tell him if shifting is needed.

Here's how it works. A receiver-transmitter is connected to the distributor side of the ignition coil which picks up impulses from the ignition system. These are transmitted to the instrument which actuates the indicator dial.

P28. Police Generator

The standard 35-amp city police generator formerly available from Pontiac Motor Division has been replaced with a 50-amp generator, offered as special equipment. It will be of particular value to fleet operators in meeting the electrical requirements of cars equipped with radio telephone installations.

P29. Load Binder

Two types of load binders are being manufactured by American Forge and Manufacturing Co. and distributed by Canton Cast Products Co., Canton, Ohio. One, shown to the left is the lever take-up type. The other, shown

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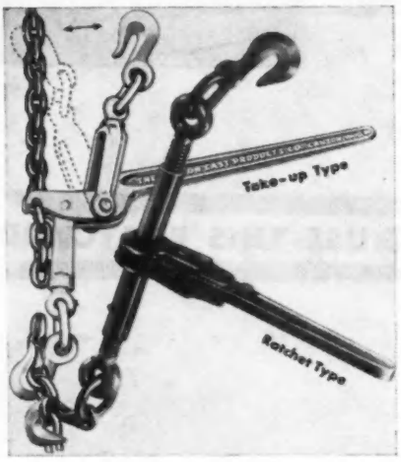
New Product Descriptions

Continued from Page 77

to the right, is a ratchet type. The type to be used depends upon the size



and distribution of the load under the binding chain as well as the preference of the truck operator.

P30. Machine Cover

The South Bend Lathe Works is offering a new plastic waterproof service cover for the protection of machines against grease, water or dust. These covers have machine-stitched bound edges and are recommended for machine shops, garages, or wherever machinery may be standing idle. The

covers come in six sizes: 12 x 28 x 28 in.; 21 x 37 x 24 in.; 32 x 48 x 17 in.; 32 x 60 x 17 in.; 38 x 72 x 25 in. and 38 x 96 x 25 in.

P31. Felt Tape

A reenforced felt tape with an adhesive back has just been announced by Products Research Co., Glendale, Calif. Known as "Kling Felt" the product does not require a paper separation material, and may be applied directly from the roll. It is recommended for use in sealing, as an insulator, a scratch protector for machinery and cushion in fragile crating. The felt is available in rolls from ¼ in. to 66 in. wide, from 1/64 in. to ¼ in. thick. The material may also be prepared as a gasket, die cut to specifications.

P32. Truck Seat

An adjustable airfoam-cushioned truck seat designed to reduce driver fatigue has been introduced by the Goodyear Tire & Rubber Co. The manufacturer states that the unit can be

adjusted both fore and aft proper seat angle, back angle, and height to meet requirements of all drivers. The cushioning is entirely of airfoam, without metal springs, an advantage said to increase the life of the seat.

P33. Oil Filter

A bonding agent applied to natural cellulose fibers is the basic structure in a new oil filter cartridge developed by Briggs Filtration Co. Washington, D. C. The fibers are then formed under pressure into "cartridges" of blocks. The size of the fibers controls the porosity of he block. The blocks are then formed into the finished dimensions.

P34. Greeting Cards

A line of special-designed Christmas cards has been offered to the trucking industry by Presteige Publishing Co., New York. The card line has a selection of views and sentiments which the printer states combines distinction with moderate price. Inquiries for 1951 mailing should be made this month.

P35. Fork Truck Clamp

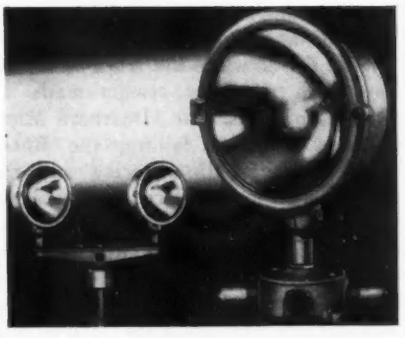
A rotating roll clamp designed for attachment to fork trucks of 2000 lb capacity is announced by Clark Equipment Co. A similar model for larger loads has proven quite satisfactory, the manufacturer states. The unit can be rotated through 90 deg so that a roll may be picked up from a horizontal position and stood on end, or vice versa. The clamp is designed to handle rolls up to 1500 lb on "2024" models or up to 950 lb on "2015" models.

P36. Wrench Changes

Several design changes have been announced by the Plomb Tool Co., Los Angeles, Calif., on the "Proto" line of standard box and open end wrenches. The open head jaws are said to be narrower, with the jaw overhang held at a minimum to prevent the jaw spreading. Changes were made in shank length, overall length, and metal finish.

P37. Outdoor Spotlight

For 100,000 candlepower with a 300-watt rating, Stoneco Electric Products



Co. has offered a unit designed to concentrate its entire light output in a long-throw oval floodlighting beam. It is recommended by the manufacturer for area protection lighting, or drive-in lighting at truck terminals.

The fixture is made of non-corrosive cast aluminum with a swivel arm threaded to ½ in. NPT to fit a variety of standard electrical conduits. Up to five lights may be grouped in a cluster.

Recommended to fleet operators for low-cost lighting.

(TURN TO PAGE 142, PLEASE)

Penn State Grooms Good Drivers

Safety, courtesy, competency in driving are stressed in several one-week college courses available to all types of fleets

TODAY in the cabs of trucks across the continent go salesmen of the highway who are the reliable and courteous representatives of the companies whose vehicles they drive. In many instances they are the only visible personal link between the producer and consumer. Through them the customer often makes his entire person-to-person contact with the company which is serving him. They need training, practice, and retraining in order that high standards of service may be maintained.

The Pennsylvania State College is a pioneer in this type of driver education and training. Methods developed in this institution have proved so sound that they have received general acceptance in our high schools and are now expanding to the commercial fleet field.

This training is offered by Penn State through short courses at times and places convenient to employees of companies interested in the improvement of their operations. The courses range from top management to the newest driver.

The fleet training programs of Pennsylvania State College are actively participated in by men on the firing line. This is made possible through "The National Advisory Committee" which is composed of representatives from trucking, bus, and taxicab associations, as well as representatives from insurance groups and large corporations having commercial fleets. Members of the Advisory Committee or of sub-committees assist in the development of new courses, the most recent of which is that dealing with the driver-instructor or driver-trainer.

This newest offering is designed for instructors of commercial drivers. These are the men who teach drivers new to the company and those new in maneuvering commercial vehicles. In addition, they give refresher courses to experienced employees on use of different types of equipment and endeavor to stimulate all to high standards of performance. Chauffeurs having accidents are slated for special attention. When properly presented, the retraining of older drivers has been very effective.

Material offered is practical. Successful operators and business men act as instructors. They give of their time and energy to share experiences with others. It is a noteworthy example of the value of cooperation.

The course contains more material than any one company will probably use but it has been expanded to make it as complete as possible. Many of the topics were selected because companies indicated a need or interest in them. A review of the course is made herewith.

Beginning with a brief history of the industry and its problems, it is followed by an analysis of the place of the driver-instructor in an organization. A review of selection processes is then made including a study of the application blank, paper and pencil tests and physical examina-

(TURN TO PAGE 174, PLEASE)

Typical scenes from safety course. Left. Lecturer discusses factors involved in safe driving practices. Right. Class watches a fire fighting exhibition

BROCKWAY

HEIL

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Reliance
HEAVY DUTY
TRAILERS

HIGHWAY

THERE ARE NO BETTER AXLES, AT ANY PRICE!

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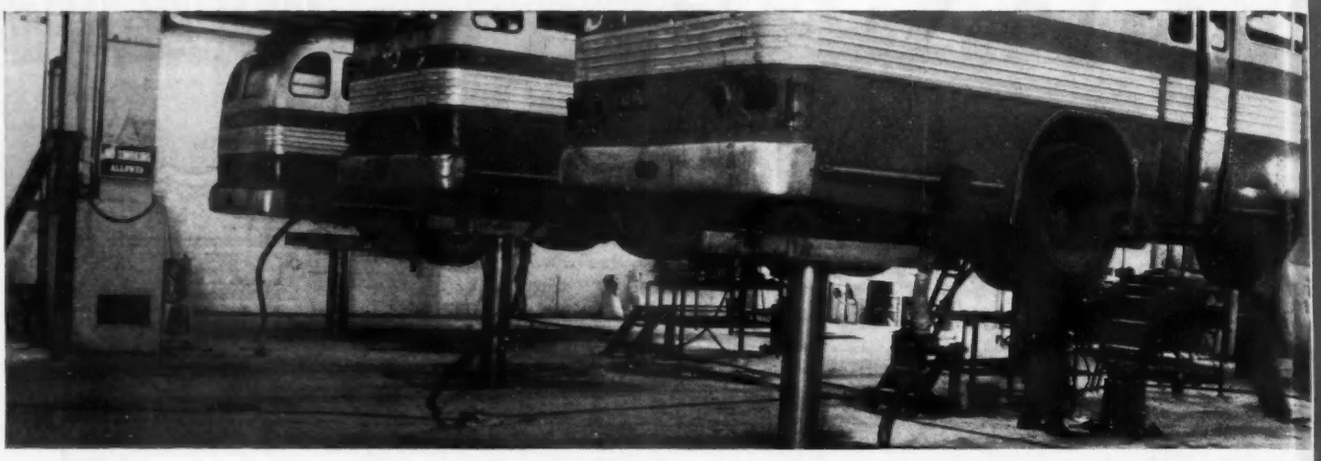


Fig. 1. Service hoists in the Flatbush garage have tail pipe connections for fume removal. Extensions are connected to an under-floor duct with outside vent

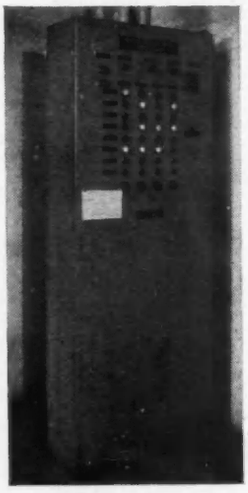


Fig. 2. Master ventilating control and indicating panel which gives functional data on various fans, dampers, alarms

Ventilation Control

Protects Garage Personnel

Continuous sampling of air detects presence of exhaust fumes, actuates air circulation system

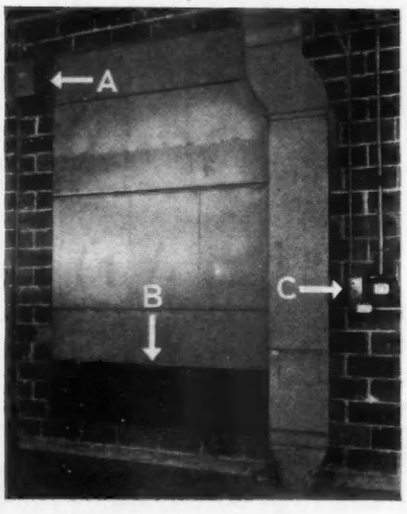


Fig. 3. (above) Air is drawn in through screen (B) sampled and tested by alarm device (A). Should more fresh air be needed, manual control (C) may be used

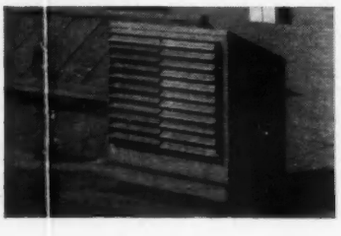


Fig. 4. (right) Fresh air is drawn in through enclosures on the roof

PROTECTION OF WORKMEN against carbon monoxide fumes in four new bus garages of New York City's Transit System is achieved through the use of two types of ventilation control arrangements. The garages, housing diesel and gasoline engine buses, are located in Flushing, Staten Island, Ulmer Park, and Flat-

(TURN TO PAGE 180, PLEASE)

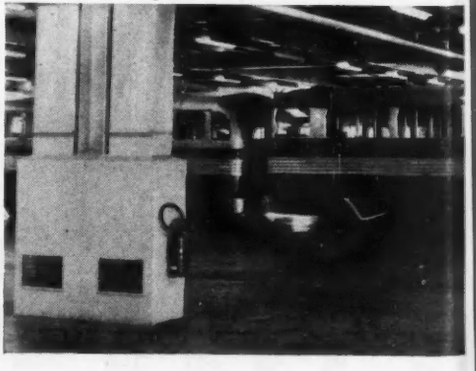


Fig. 5. Air discharge openings in the various zones are at floor level, with louver blades set to create turbulence

Sealed Power

PAX EBONITED PISTONS

are the only pistons made in which section of greatest wear can be replaced!

Every PAX Piston Equipped with GI-60 Contracting Groove Insert!

Every Sealed Power PAX Piston comes factory-equipped with the famous Sealed Power GI-60 Contracting Groove Insert—the only dependable, economical, long-lasting preventive of top ring groove wear!

This is a feature of vast importance to every fleet operator, because the top ring groove is the part of every piston that wears out first—the part subject to the greatest heat and the greatest pressure, and the part protected by the least lubrication.

By installing the Sealed Power GI-60 in every PAX Piston, Sealed Power has added thousands of miles of service!

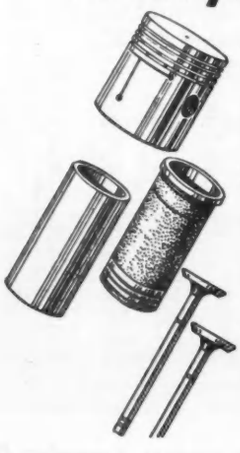
Sealed Power PAX Pistons are manufactured from genuine Lo-Ex* Virgin Aluminum Alloy with silicon base, which dissipates heat most efficiently. Special Eboniting process assures smoother-running engine because piston surface is oil-impregnated, oil-absorbing. T-slot design, cam-ground, with rugged internal construction for extra strength and fast heat transfer.

*Registered trade mark of Aluminum Co. of America.

Write for name of nearest distributor

SEALED POWER CORPORATION
MUSKEGON, MICHIGAN

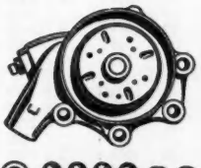
Always use Sealed Power parts for best results



HEAVY DUTY PISTONS—Aluminum or cast iron as indicated; exclusive T-slot design, cam ground, ruggedly designed, heat treated. Equal to or better than original equipment.

WET OR DRY SLEEVES—Machined from closely controlled castings, with exceptionally fine grain and dense molecular structure for long wear.

VALVES—Sealed Power Valves and valve parts are made from the correct grade of chrome nickel alloy steel for each engine, for finest performance and maximum service.



WATER PUMPS—Manufactured from finest quality materials to highest standards. Our line is complete.

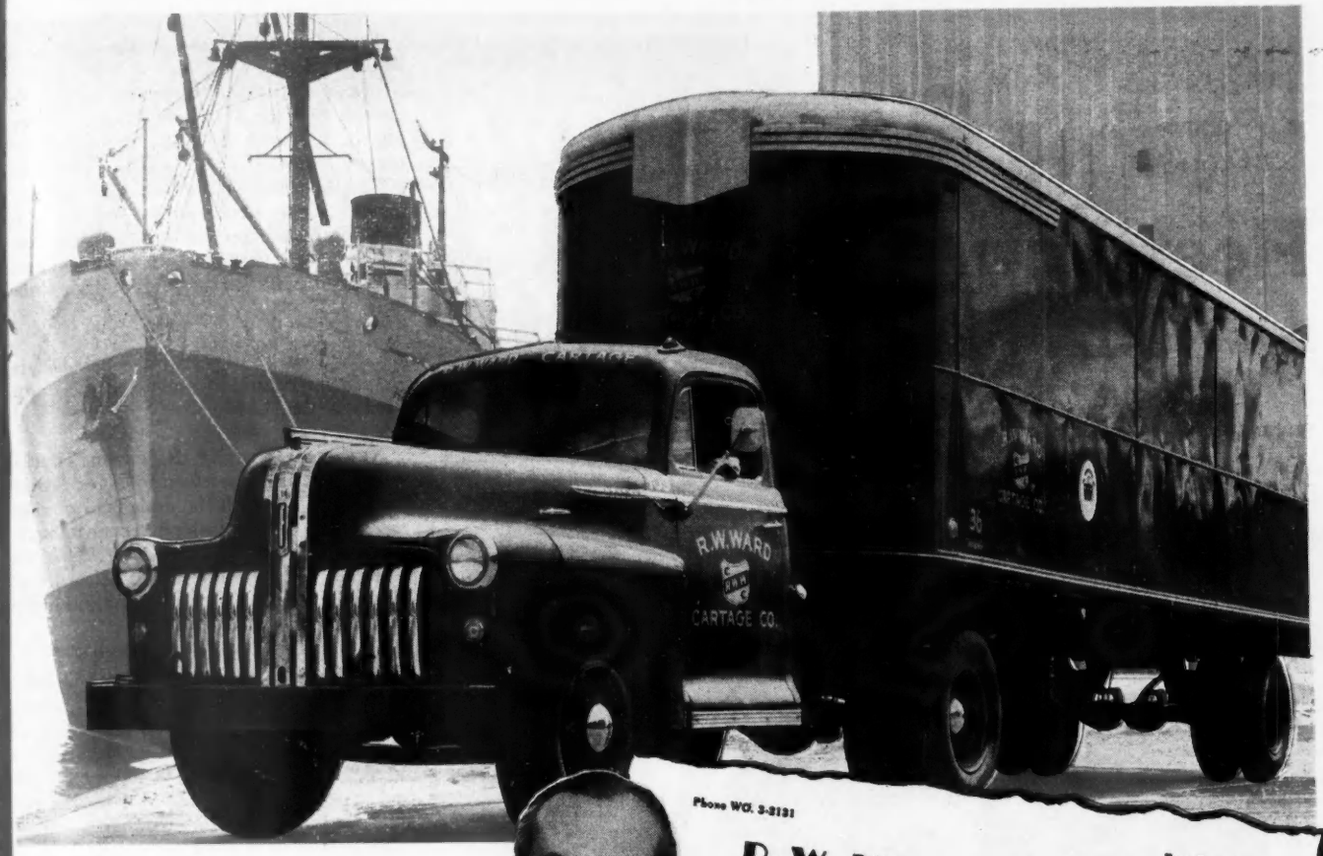
KING BOLTS & BUSHINGS—Manufactured from highest quality forgings, and heat treated to meet your exact requirements.

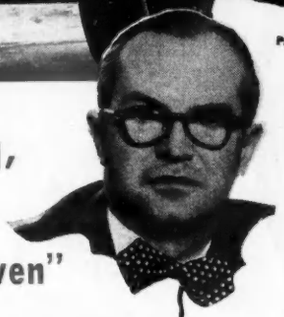
TIE RODS & SHACKLES—Sealed Power Tie Rods, Spring Shackles, and Front Wheel Suspension Parts meet specifications of original equipment.

1951 New Truck Registrations by Makes by States*

STATE		Auto-car	Brock-way	Chev-rolet	Dia-mond T	Divco	Dodge	Fed-eral	Ford	FWD	GMC	Inter-na-tional	Ken-worth	Mack	Peter-bilt	Reo	Ster-ling	Stude-baker	White	Willys	All Others	Total
Alabama	June	1		826			183	2	538		192	88		3		1		49	11	21	1	1,916
	6 Mos.	5		4351	9	12	988	5	2996	1	1122	690		95		22		326	112	184	13	10,931
Arizona	June			275	1	2	77		183		98	66	1			11		27	11	23	3	778
	6 Mos.	2		1157	6	8	406	4	845		426	267	5	10	4	15		122	38	96	15	3,428
Arkansas	June			317			58		175		91	36		1				23	1	16		718
	6 Mos.			3489	7		826		2447		1215	621		10		22		323	47	185	6	9,198
California	June	13	3	2088	48	12	976	9	1454	17	757	318	28	36	7	8	11	179	39	105	9	6,097
	6 Mos.	125	5	10995	215	245	4542	19	8114	51	4115	2236	129	262	132	85	66	1142	287	660	59	33,484
Colorado	June			408	5	3	100		270	1	115	60		2		1		26	1	35	3	1,032
	6 Mos.	19		2535	16	26	601	8	1823	6	735	582	15	41		27		197	20	284	18	6,933
Connecticut	June	6	4	291	7	12	93	3	174	1	55	60		36		14	1	17	16	22	2	814
	6 Mos.	35	33	1380	54	63	518	21	948	1	328	404		212		34	7	105	77	130	15	4,365
Delaware	June		3	63	3	2	17		90		18	21		1		3		6	3	5	1	236
	6 Mos.	4	8	494	12	3	136		442	1	97	152		10		7		42	13	20	5	1,448
District of Col.	June	1		73	2	6	30	1	67		41	24		1		3		2	10	13	3	277
	6 Mos.	7	3	578	23	23	155	2	304		222	168		14		12		11	24	48	4	1,593
Florida	June		1	671	11	6	217	1	453		150	85		12		3		87	17	73	6	1,793
	6 Mos.	6	2	3888	78	36	1561	3	2700	2	910	681		175		67		533	103	528	55	11,346
Georgia	June			1396	3	1	284		1005		394	149		27		7	1	135	29	23	4	3,459
	6 Mos.	1	7	6490	18	13	1486	6	4838	2	1666	1152	1	154		44	2	684	141	252	33	17,000
Idaho	June			214	4	1	55	3	171		122	84	4	9		3		27	6	60	1	734
	6 Mos.			1013	29	5	318	11	716	1	572	383	31	34		12	1	157	29	241	3	3,558
Illinois	June	5		1554	61	30	483	3	847		363	420	1	20		18		117	54	39	2	4,017
	6 Mos.	33	3	8322	355	136	3242	16	5530	4	2209	2959	1	185		98	7	623	358	380	65	24,527
Indiana	June			699	9	4	264	2	463	3	158	214		4		2		98	31	42	4	1,995
	6 Mos.	3	1	5152	59	49	1731	11	3705	4	1078	2096		112		74		697	339	302	25	15,433
Iowa	June			785	9	2	167		581		167	282		2		1		54	7	44	3	2,101
	6 Mos.	1		4173	63	23	1057	1	3293		870	1586		40		19		320	88	158	14	11,708
Kansas	June			761	3	1	124	1	390		142	129		3		2		30	20	32	1	1,639
	6 Mos.			3897	22	15	787	6	2422		994	1106		7		13		263	66	198	5	9,801
Kentucky	June	4		717	3	4	149		433		154	96		2		3		51	6	60	5	1,637
	6 Mos.	5		3685	41	11	844	4	2433	1	927	830		38		21		301	51	385	20	9,575
Louisiana	June	1		565	6		127		457		160	94		4				60	6	19	1	1,502
	6 Mos.	3		3515	53	5	685		2829	5	1043	683		21		4		350	38	182	8	9,424
Maine	June		1	137			35		96		41	36		8				23	11	9	2	399
	6 Mos.	6	8	1001	3	3	223	6	733		288	256		71				107	42	98	7	2,852
Maryland	June	5	4	325	1	1	107	6	237		69	81		22		6		28	14	27	1	932
	6 Mos.	16	40	1945	11	53	707	36	1377	1	541	561		132		34	2	107	83	105	6	5,762
Massachusetts	June	10	12	351	10	23	144	2	293	1	99	109		18		17	3	40	40	11	5	1,188
	6 Mos.	134	65	2401	69	86	964	26	1966	6	659	673		198		84	27	200	226	145	23	7,950
Michigan	June	6		1354	10	27	385	10	1139		314	186		16		31		67	22	50	7	3,624
	6 Mos.	36		7895	67	134	2387	68	6702		1767	1424	1	128		172		382	190	283	25	21,643
Minnesota	June			628	9	3	230		495	1	184	277		10		5		70	4	21	1	1,938
	6 Mos.			3388	39	26	1179		2740	14	900	1283	4	36		20		435	64	215	23	10,387
Mississippi	June			751	1		133		447		252	103		6				66	4	35		1,793
	6 Mos.			3856	4		784	7	2632		1411	716		40		2		294	49	300	3	10,038
Missouri	June	1		1331	6	1	319		711		305	186		2		5		67	47	47	4	3,032
	6 Mos.	6		7074	38	85	1900	1	4442		2079	1437		30		46		469	325	254	16	18,202
Montana	June			205	4		44		152		64	72	4	3		5		20	3	48		624
	6 Mos.			1350	24	3	306	2	840	3	464	473	15	21	5	26		155	33	313	2	4,035
Nebraska	June			550	6	1	85		354		160	189	1	3		4		48	14	59	2	1,476
	6 Mos.	2		3353	85	7	573		2134	1	869	1065	21	41		20		280	69	386	9	8,795
Nevada	June			60	1		6		35		21	13						8		7		151
	6 Mos.			302	4		95		188	1	184	85				1		28		39		928
New Hampshire	June	3	1	97		6	25		65		30	19		6		1		10		6	2	271
	6 Mos.	10	10	595	3	10	191	3	477	2	185	170		64		13		70	13	71	5	1,892
New Jersey	June	14	20	708	14	27	232	4	502		169	142		48		10	2	33	34	47	11	2,023
	6 Mos.	120	247	4669	89	153	1422	55	3030	6	1172	1061		386		69	15	285	270	332	33	13,425
New Mexico	June	1		138			22		74		55	20		10				22	1	12	1	358
	6 Mos.	1		1253	3		254		887	2	452	206	2	25	1	1		132	8	107	6	3,140
New York	June	23	44	1385	37	36	554	12	910	1	324	359		106		41		89	131	86	18	4,156
	6 Mos.	202	456	8585	322	235	3571	89	5455	29	2246	2617		915		316	22	554	709	718	183	27,229
North Carolina	June	7		795	7	5	174	2	609		170	105		16		2		69	23	38	29	2,049
	6 Mos.	54	4	5259	21	43	1142	8	3535	1	1512	968		281		25	2	491	176	257	145	13,924
North Dakota	June			135		1	23		97		19	47						9		6		337
	6 Mos.			1005	4	2	317	6	770		232	400		1		2		112	2	92	3	2,948
Ohio	June	12		1461	14	26	487	1	1110	1	353	314		52		21		137	112	87	8	4,176
	6 Mos.	76	10	8544	147	173	2789	35	6266	9	2042	2490		316		167		714	736	609	76	25,199
Oklahoma	June			800	1	3	172		528		178	129		2		2		49	21	24	1	1,910
	6 Mos.			4090	3	29	949	1	2713	26	951	878	8	13		20		253	123	172	8	10,235
Oregon	June	2		492	13	3	268	3	410	1	217	195	13	44	2	6	3	61	23	115	4	1,875
	6 Mos.	5		2347	51	20	946	13	1492	1	857	792	44	140	15	14	7	221	77	489	27	7,558
Pennsylvania	June	28	41	1795	30	15	753	10	1293	2	439	477		93		26	5	132	125	106	19	5,389
	6 Mos.	135	358	8017	179	75	3579	66	6007	3	2182	2866		698		140	19	879	605	619	88	28,315
Rhode Island	June	8	1	97	2	2	26		82		25	12		7				6	6	5	1	280
	6 Mos.	30	5	510	10	16	175		455		122	155		37		1	1	43	35	39	6	1,640
South Carolina	June	1		569	4	1	125		300	1	142	83		12		1		35	9	10	1	1,274
	6 Mos.	7	1	3121	8	5	702		1727	1	685	444		87		3		214	61	108	11	7,185
South Dakota	June			169	3		41		134		41	101		1				15		24	2	531
	6 Mos.			1001	25	2	367	1	786		318	627	3	4		4		134	11	151	2	3,436
Tennessee	June			752		1	198	1	536		198	110		5				53	29	32	7	1,922
	6 Mos.		2	4444	13	22	1224	16	3002		1302	846		92		9		349	111	193	22	11,647
Texas	June	5		3364	10	9	647		2128		903	445	2	36		16		221	66	124	10	7,986
	6 Mos.	32		16914	89	72	4181	9	11835	2	5782	3134	5	177		97		1486	440	823	55	45,133
Utah	June			180	1		44	2	105		94	46	1	4		3		13	3	12	2	510
	6 Mos.			967	12	24	216	7	611		423	283	17	22	5	12		74	24	84	12	2,793
Vermont	June			63	1		14		37		30	21						4		27		197
	6 Mos.	1	5	436	5	1	103	2	277	2	133	159		19		6		36	3	109	2	1,299
Virginia	June	8	1	756	3	13	192	2	534		189	168		24		5		72	18	32	5	2,022
	6 Mos.	26	35	4003	20	57	1045	12	2750	18	878	977		196		23		323	134	262	23	10,782
Washington	June			354	10	3	165		220		165	111		6		9		25	18	64	1	1,149
	6 Mos.			2168	56	29	1003	2	1465	5	832	725	60	69	2	26	6	209	102	305	55	7,119
West Virginia	June			357	1	4	119	3	253		84	58		14		7		33	7	49		989
	6 Mos.	2	18	1927	10	22	718	18	1461	7	582	424		70		18		150	63	395	5	5,890
Wisconsin	June			654	6	7	158		438	1	153	199		6		5	1	46	18	32	5	1,729
	6 Mos.	9		3567	42	47	1090	18	2609	34	883	1349		60		51	4	304	133	214	31	10,445
Wyoming	June			125	2		36		86		27	25		2				11	2	22	1	339
	6 Mos.			830	13		224		516		262	223	5	11		4		71	14	181	1	2,355
Total	June, 1951	165	136	32621	384	304	9347	83	22161	31	8691	6643	55	745	9	303	27	2574	1071	1907	199	87,481
Total	June, 1950	166	180	35438	436	308	8969	104	25773	24	7304	7926	63	690		271	25	3520	905	2109	301	91,512
Total	6 Months, 1951	1161	1326	181931	2529	2107	55209	624	128065	253	51724	46363	367	5796	164	2002	189	15540	6785	12561	1300	515,975
Total	6 Months, 1950	973	987	185844	2631	1805	37562	603	145440	154	41991	46030	263	4606		1529	167	22764	5014	10033	2000	510,423

* Data from R. L. Polk & Co.





"The Easiest Handling, Most Comfortable Trucks We've Ever Driven"

That's the word from Ward Cartage Company drivers. "But", Mr. Flenniken reports, "not only does the Federal Style Liner make truck driving easier . . . safer . . . and more comfortable—it has an impressive, profit-making performance record as well."

Federal's new and exclusive *Swing Lift Fender* . . . offering 100% greater accessibility . . . is just one of more than 100 new and improved all truck features built into the Federal Style Liners—America's most outstanding truck value.

There are many models to choose from and a wide range of powerful, high torque engines and wheelbases to economically master your hauling needs. For truck transportation at its very best, see your nearby Federal dealer today!

FEDERAL MOTOR TRUCK COMPANY
DETROIT 9, MICHIGAN, U. S. A.

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Stake Trucks, Trailers, and Tractors by Contract, Hour, Day or Load
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CITY WIDE SERVICE

1637 WEST FORT ST. DETROIT 16, MICH.

August 25, 1951

Federal Motor Truck Company
5780 Federal Avenue
Detroit 9, Michigan

Gentlemen:

When we bought our Federal Style Liners last Fall, I told you that I would give you a "straight-from-the-shoulder report on how they work out for us.

I'm sure I can't put it any better than my drivers — "The Style Liners are the easiest handling, most comfortable trucks we've ever driven".

Of course, when the drivers are enthused and happy over new units, I'm happy. But, I'm exceptionally well pleased with the Style Liners for another reason which is mighty close to the pocketbook. These trucks have been in operation for almost a year and I have kept very accurate comparative operating costs on each unit. Let me tell you, the Federal Style Liners have a performance record you can be proud of. They are a profitable truck to own — and you can quote me on that one!

Best regards.

Sincerely,

R. W. WARD CARTAGE COMPANY

Robert B. Flenniken

Robert B. Flenniken
ceb

President

FEDERAL TRUCKS

Fleetman's LIBRARY

Pounded to Pieces is the title of a booklet prepared by Pennsylvania Motor Truck Association in rebuttal to the argument that the Maryland Road Test completely destroyed the test highway beyond repair. Pictorially, the booklet shows why PMTA believes that the test road was and is very much alive and in one piece. It has contrasted sections of the highway (Route 301) now being used by normal traffic with the sections used during the test.

Vaco Screw Drivers are described in an attractive catalog available from Vaco Products Co., Chicago.

National Security Rides on Trucks is a booklet being released by Mack Trucks Inc., New York. It is designed to meet the needs of educators, commentators, editors, group leaders, etc. by giving them a factual and dramatic highlight summary of the importance of the trucking industry to the country's economy.

At Your Service . . . Leece-Neville is the title of a new 24-page brochure which describes the firm of Leece-Neville, Cleveland, Ohio and its line of manufactured electrical equipment for diesel, gas and gasoline engines. The brochure outlines the part played by the Leece-Neville organization as a pioneer in this field of manufacturing for over 40 years.

Welding Accessories are described in a new bulletin just published by the Cam-Lok Division of Empire Products Co.

Full details on how to form defense production pools are contained in a booklet issued by the Defense Production Administration.

Schrader Products Manual-Catalog No. 200 outlines the certified air service method recommended by A. Schrader's Son, Brooklyn, N. Y., manufacturers of pneumatic valves. The system involves a test master gauge used to certify the accuracy of "work-horse" tire gauges that may need repair or replacement. The catalog also makes specific recommendations as to tire pressures.

Catalog DM, of Wales-Strippit Corp., North Tonawanda, N. Y. illustrates and describes the new Wales drilling machine for precision layout, drilling, and reaming of holes. The catalog and machine are recommended for body shops and operations which do a quantity of metal machining.

Comic Books for employers to distribute to their staff are available from Pictorial Media Inc., 205 E. 42nd St., New York 17, N. Y. The book tells the story of inflation and what the individual can do about stopping it. The title, "How Stalin Hopes We Will Destroy America," the price $10.00 per hundred, with quantity prices lower. The book was prepared and is being publicized by Bemis Bro. Bag Co., St. Louis.

(TURN TO PAGE 88, PLEASE)

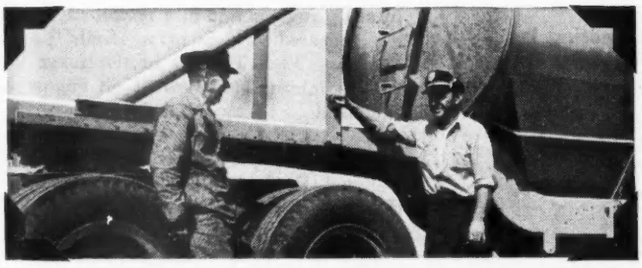
STANDARD ENGINEER'S REPORT

DATA

LUBRICANT	RPM Delo Oils
UNIT	#450 International gasoline engines
CONDITIONS	Heavy hauling
PERIOD	1½ years
FIRM	Kenneth Poorman Co., Portland, Oregon.

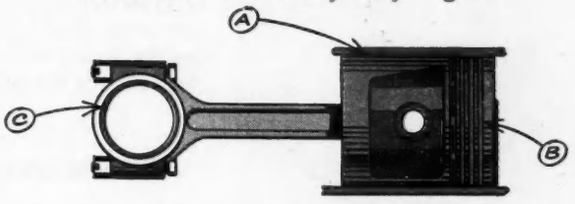
Rings "perfect", only 0.001 cylinder wear after 80,000 miles!

RPM DELO OILS eliminated all stuck rings, scoring and deposit trouble in 21 units like these, hauling loads up to 72,000 pounds on construction jobs. 80,000 miles after switching to RPM DELO Oils a check showed: "Rings so perfect they could have been put back in the engine. Average cylinder wear only 0.001 inch," according to Maintenance Supt. C. H. Johnson, Kenneth Poorman Co., Portland, Ore.



"100,000 MILES IS NOW OUR OVERHAUL PERIOD, but the way RPM DELO Oils perform, I believe we could extend it to 200,000 miles," says Mr. Johnson (left), shown here with Manager Joe Stephani. RPM DELO Oils have made many outstanding service records in all types of heavy-duty gasoline and diesel engines. They will keep your engines clean, reduce wear and cut operating costs. One of these will meet the operating conditions in your heavy-duty engine: RPM DELO Heavy Duty, RPM DELO Special, RPM DELO Supercharged-1 Oil, RPM DELO Supercharged-2 Oil.

How RPM DELO Oils reduce wear, corrosion, oxidation in all Heavy-Duty Engines



A. Contain special additives that provide metal-adhesion qualities...protect parts whether hot or cold, running or idle.

B. Anti-oxidant resists deterioration of oil and formation of lacquer...prevents ring-sticking. Detergent keeps parts clean...helps prevent piston scuffing.

C. Special compounds stop corrosion of any bearing metal and foaming in crankcase.

FREE BOOKLET on the RPM DELO Oils gives you complete information. Write or ask for it today.

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RPM DELO LUBRICATING OILS

FOR MORE INFORMATION about this or other petroleum products of any kind, or the name of your nearest distributor handling them, write or call any of the companies listed below.

STANDARD OIL COMPANY OF CALIFORNIA
225 Bush Street • San Francisco 20, California

THE CALIFORNIA COMPANY
P. O. Box 780 • Denver 1, Colorado

STANDARD OIL COMPANY OF TEXAS
P. O. Box 862 • El Paso, Texas

Fleetman's Library

Continued from Page 86

Reynolds Aluminum And the Company That Makes It is the title of a book prepared by Reynolds Metals Co., Louisville, Ky. It gives the story of Reynolds, its products, fields served, and other related information.

ABC of CMP, an outline of the basic operational procedure of the Controlled Materials Plan has been published by the U. S. Department of Commerce. It gives a simple story of the plan and is recommended reference item for the fleet operator.

Hercules Load-N-Gate is described in a folder being distributed by Hercules Steel Products Corp., Galion, Ohio. The information included in the folder gives various applications for the lift, and shows the platform "locked in various positions for loading and unloading.

Over the Rough Spots is a new pocket-size booklet which gives an analysis of flooring problems, showing how to make various repairs. The publisher, Stonehard Company, 1306 Spring Garden St., Philadelphia, Pa.

Special Service Tools for Quick Service Operations has been published by Kent-Moore Organization Inc., Detroit 2, Mich. It describes and illustrates selected special service tools of widespread application which are of particular interest to auto repair shops and fleet maintenance departments.

Wisconsin Engines and their application to various vehicles and other equipment are outlined in a folder prepared by Wisconsin Motor Corp., Milwaukee. The information includes various applications of each model, specifications, sizes, etc. A directory of Wisconsin representatives is included.

Grizzly Brake Linings "Catalog 51" is now available from Grizzly Mfg. Co., Paulding, Ohio, or their distributors. The new book contains complete application data on buses, trucks and tractors as well as specifications of the brake sets and the quantity and size of rivets or bolts needed for each.

Owatonna Tool Co. has a new bulletin on their Power-Twin hydraulic puller which illustrates methods for installing and removing cylinder sleeves, shafts, gears, wheels and many other uses for the unit.

How to use your vacuum and fuel pump gauge is told in a pocket-size booklet prepared by Snap-on Tools Corp., Kenosha, Wisc. The use of the gauge for various internal analyses of an engine is explained.

Scrap for Steel for Defense is the National Production Authority's information booklet which describes the need for scrap in the present defense mobilization. The NPA is conducting a campaign which it hopes will cause dormant scrap metals to be sold back into the industry.

Selling Sense for the Route Salesman by Fred DeArmond; published by Lloyd R. Wolfe, Chicago, is a 135-page hard bound book that has hundreds of sound sales ideas and sales strategy. It is written in a manner easily and quickly understood, which will help the beginner as well as the veteran route man to produce greater volume and increase profits from any territory, wholesale run, or house to house route. Price $3.50.

Heavy duty dump trucks are described in a new catalog prepared by Euclid Road Machinery Co., Cleveland, Ohio. Rear and bottom dump models from 10- to 34-ton rated capacity, an 18-cu yd scraper, and a loader are described. They use various models of General Motors Series 71 diesel engines from 125- to 190-hp rating. A directory of distributors and factory branches is included.

Simplified Inventory System

The face of the tag, which may be printed in color, screams for attention. The parts clerk will then know that the item should be reordered

By Stuart Covington

EVERY FLEET OPERATOR realizes the problems which defense mobilization poses for the trucking industry. One of these problems—material shortages—can at least be eased by a simplified inventory system.

The key to this problem, then, is the early and systematic ordering of replacements so that a delay in their arrival will not cripple operations. The practice of proper ordering will save dollars, as well as delays, by eliminating the purchases of individual parts at retail list price from various sources. Purchasing contacts then may be developed where quantity and trade discounts will be more readily negotiated; based on wholesale prices rather than retail.

Few small, or even medium size, fleet operators would find it practical to install a complex perpetual inventory system such as employed by the large fleets or distributors. These systems are not designed for the limited inventory of most fleet shops. However, a simple but efficient form of supply record is readily available with a few simple materials. Here's how one works.

Setting Up the System

FIRST, drive a three-penny fine, finishing nail half way into the top of every pigeonhole in the parts bin. Second, buy a supply of red and blue shipping tags, (the type with the string attached). Each tag should be lettered with these words: "HANG ME OUTSIDE". A space should be provided on the tag for a description of the part, its catalog number, or any information

Assures Adequate Parts Supply

which the shop foreman will need in making out his replacement requisition.

Then, find the minimum number of parts which must be kept on hand in the various categories or a point at which re-ordering should take place. Take the tags and tie one to each part in this minimum number. Place the tagged parts near the back of the pigeonhole with the untagged to the front. This is important. Attach blue tags to the parts that can be replaced most rapidly, red tags to those which are most likely to become scarce.

Instruct mechanics, helpers, or stockroom clerks who take out the tagged parts to immediately hand the detached tag on the nail above the pigeonhole from which the part was taken. The legend on the cards will serve as a reminder.

Effect of the System

WHEN employees remove the first few parts from each pigeonhole, the tagged pieces will not be reached; being near the rear of the bin. The most accessible parts will be used first. When the quantity of a particular part is reduced, the tagged part ultimately will be reached and the tag hung outside the pigeonhole as a flag to the shop foreman that a re-order is required. He will note the appearance of the red or "scarce" tags which may require special attention. The order will be placed neither too early not too late.

As soon as the new order is placed, the tag should be removed and held with the duplicate order copy until the replacements arrive. This will prevent double-ordering.

(TURN TO NEXT PAGE, PLEASE)

The reverse side of the tag lists information about the part, handy for easy ordering, without involved search for parts data from factory or jobber catalogs

Simplified Inventory System

Continued from Page 91

For peak performance of this system, each of the tags should be labeled with a complete description of the part it represents. This would prevent possible errors caused by a tag being hung on the wrong nail or a mistake being made when the tags are taken up. Under this setup, the shop foreman would be guided by the description on the tag instead of information written above or below the pigeonhole, or a long search through parts catalogs.

Other Uses of the System

A SIMILAR system will prove effective in keeping tabs on office supplies. From an art or office supply store purchase a bundle of colored paper, the same size as the drivers' logs, shop reports, supply requisitions, etc. On these colored sheets, type or print the words "RE-ORDER TODAY". Insert these slips slightly below the middle of each batch of forms, fastening them to the sheet beneath.

When each stack of forms has dwindled down to the colored slip, the bright reminder slip will call attention to the reduced supply. Remove the reminder and re-insert it near the bottom of the stack. It is a second appearance that will be a cue to check on whether the order has arrived or not.

An inventory system of this type will pay dividents regardless of whether a materials shortage develops or not. It will prove worthwhile for the small fleet operator and the larger operations as well.

Often the small fellow will experience difficulty in filling his needs and will require plenty of time to look for replacements. Even in normal times, a proper inventory system is desirable. With wages likely to retain their position for many years to come, an idle mechanic is a cost item which a wise fleetman wants to avoid.

Intercity Freight Increases

In a report made recently by the U. S. Department of Commerce, an interesting increase was noted in intercity freight statistics. A table showed the total miles traveled by truck and tractor for 1950 in tons to be 5,230,387,552 as compared with 4,158,205,889 for 1949. This meant an increase in mileage to equal 25.8 per cent. In tons of revenue freight, a similar increase was noted from 170,474,889 in 1949 to 218,057,890 in '50 or an increase of 27.9 per cent.

"YOU SAID YOU WANTED TO PUT IN A NEW SLEEVE."

NOW Rolling!

Over 100,000 Aluminum Wheels Forged by ALCOA

On the market less than 2 years. Yet fully proved. Completely road-run tested. Widely preferred by leading fleets known for their strict equipment standards. Over 50,000 sold in 1950 alone.

Briefly, that's the story of aluminum spoke and disc wheels, forged by Alcoa. Fleets like these strong, light wheels because they reduce unsprung weight—add up to 400 lbs. extra payload capacity per tandem axle. Military needs limit the aluminum we can supply as wheel forgings. But forged aluminum wheels belong in the long-range plans of every profit-minded fleet.

Send for free booklet!

Full information on Alcoa Forged Disc Wheels . . . advantages, specifications, installation data. Write ALUMINUM COMPANY OF AMERICA, 1871-J Gulf Building, Pittsburgh 19, Pennsylvania.

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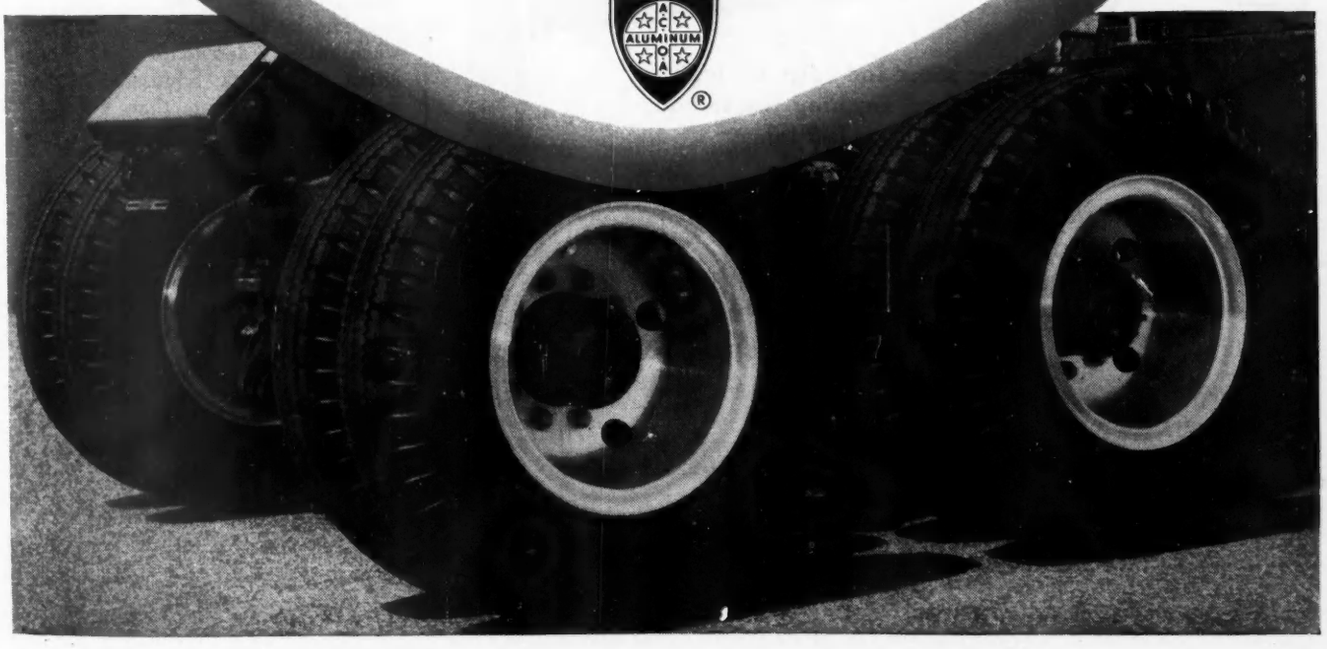

Tell It To The Judge

Continued from Page 55

general trial procedure will be sufficient. Actually a driver needs just enough knowledge about the organization and procedure of courts to let him present the facts of the case confidently.

Basic Jurisprudence

MISDEMEANOR trials are heard by the states' lowest courts, which may be named in the various states as the justice of the peace, the magistrate, the traffic, or the common plea court, or a local title. The official presiding over the trial is known as a judge, magistrate, or justice of the peace. He delivers the verdict and levies the fine, if the defendant is found guilty.

A prosecutor—called state's attorney, district attorney, prosecuting attorney, or one of several other names—presents the arguments favoring conviction, and recommends a penalty. A sheriff, deputy sheriff, constable, or bailiff maintains the order of the court and collects any fines that must be paid.

Here is what a driver should know about the ordinary procedure in a minor traffic trial:

After the arrest, the arresting officer and the defendant are interviewed by the prosecutor, who quickly forms his plan of court action. A little later, often immediately, the case is called before a court. The judge reads to the defendant a charge prepared by the prosecutor which declares what law was broken and how. The defendant is given an opportunity to plead guilty or not guilty.

The prosecutor then presents the facts he feels prove the defendant's guilt. Usually, the arresting officer testifies. If the defendant disagrees with any information presented, he should request the judge's permission to register a protest.

After the prosecutor finishes, the defendant presents his case. He, too, may call witnesses. At the time of the arrest the defendant should obtain names and addresses of any witnesses who share his opinion of the affair and ask them to appear in court. However, usually it is difficult to get such witnesses to testify.

The judge then rules on the case, and if a guilty verdict is returned, the prosecutor recommends a sentence. In the horse-trading tradition, the prosecutor usually recommends a harsher penalty than he feels the judge will levy. When a fine is paid, the driver should retain his receipt.

Plead "Guilty" or "Not Guilty"?

A TRAFFIC trial at its longest takes takest very little time. An innocent driver, therefore, is saving little hauling time by pleading guilty. However, when guilty, a defendant should readily admit it. Frank admission of guilt means a lighter fine than a stubborn

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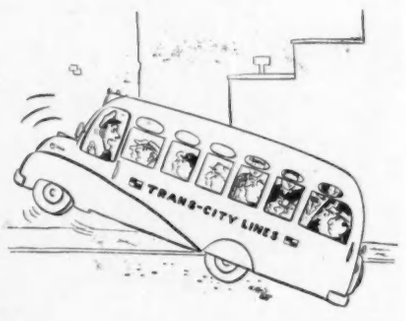
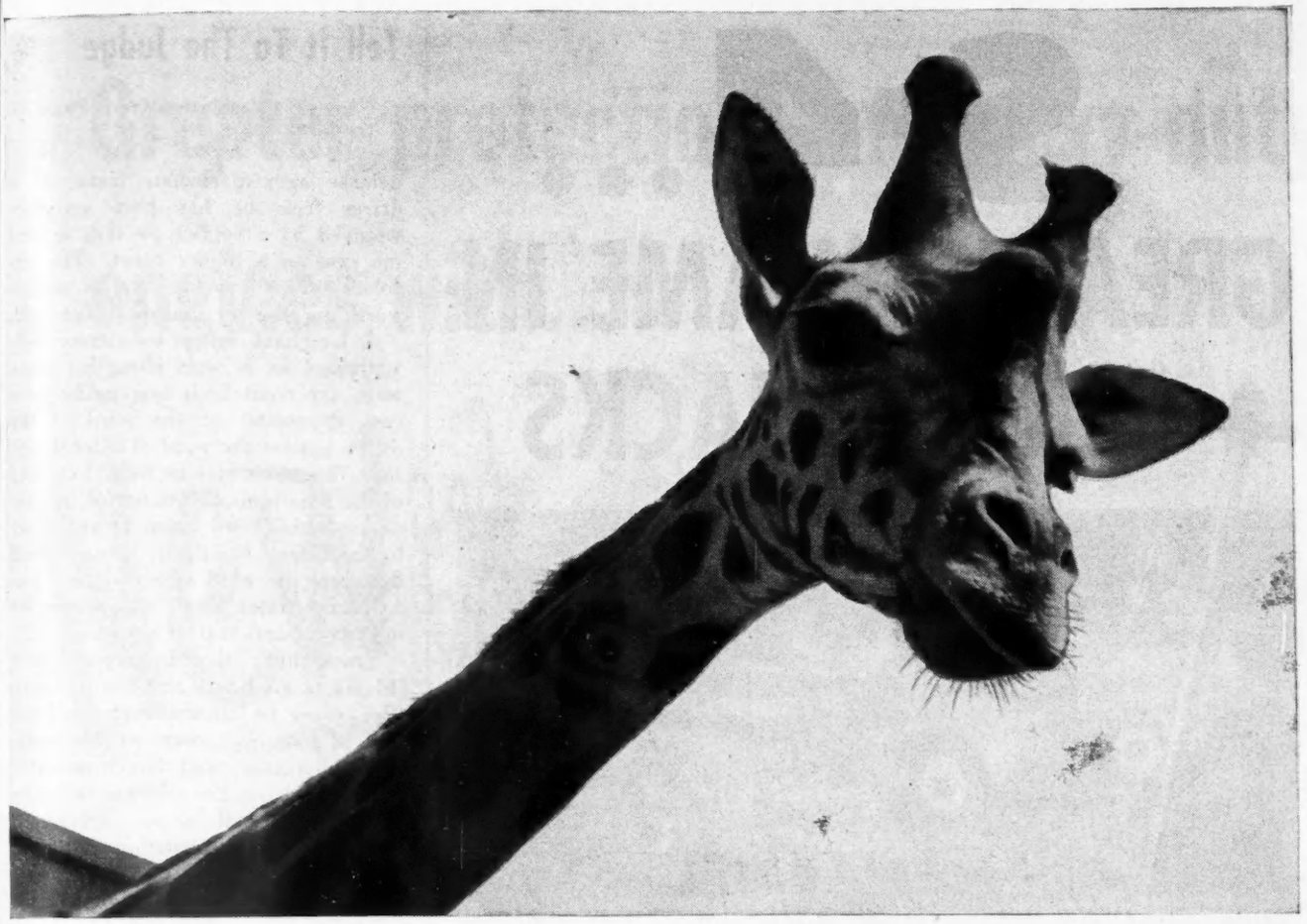


"Step to the FRONT of the bus . . . please!"



S-T-R-E-T-C-H

Your Maintenance Dollars with

VEEDOL 90 H.D.

VEEDOL 90 H.D. can s-t-r-e-t-c-h your maintenance dollars to the limit, by prolonging the period between major overhauls. That's because special kinds of protection are designed into VEEDOL 90 H.D.'s "Film of Protection."

The most modern additives known to petroleum science are blended with the natural stable oil in VEEDOL 90 H.D. to produce a motor oil that reduces gum and sludge formation in motors, protects bearings against corrosion, and minimizes lacquering of pistons and valve stems . . . *even under continuous full-throttle operation!*

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Tell It To The Judge

Continued from Page 94

defense against obvious facts. If a driver feels he has been seriously wronged by a verdict, he may appeal the case to a higher court. This involves time and money and is seldom worth the effort in a misdemeanor trial.

A long-haul driver sometimes feels victimized by a court along his route when the court finds him guilty in a case depending on the word of the driver against the word of a local citizen. The driver may be right, but most of the time he is the victim of human-nature rather than intent by the court to cheat him. A judge is almost bound to accept the word of a man who has a locally established reputation for honesty against that of a stranger.

Truck lines should prepare their drivers to meet this problem in court. The officer or citizen from the local area is going into court with a ready-made impression, and though probably he neither drives nor observes events on the road as well as an experienced truck driver, his reputation will be a courtroom crutch.

The truck driver must establish his reliability in the short time of a trial. He must impress the judge as an honest, level-headed man doing his job well and safely.

Mind Your Manners

ON THE outskirts of a small city on one of the nation's major highways, a local banker pulled his car from a side road into the path of a tractor-trailer combination. Unable to stop quickly enough, the truck driver passed the banker, forcing an oncoming car off the highway and frightening the banker. The state police arrested the driver and brought him into court at the banker's request. The trial hinged on whether the car had pulled on the highway far enough in front of the truck to allow it to stop.

The judge might have ruled in favor of the driver and against his banking friend had not the driver angrily berated his opponent and accused him of dishonesty, a suggestion which antagonized the judge.

The best way to impress a judge is by knowing enough about the procedure of his court not to become panicked into a display of nerves or temper. He should be respectful toward court officials, who are entrusted with an important job. He should talk in court only after asking and receiving permission to do so by the judge. He

(TURN TO PAGE 100, PLEASE)

Greater protection for heavy-duty engines with...

New and better... STANOLUBE HD-M

REG. U. S. PAT. OFF.

Motor Oil

● Take a close look at the pistons shown in these enlarged, unretouched photographs. They give graphic evidence of the superior protection new STANOLUBE HD-M Motor Oil offers in automotive diesel and heavy-duty gasoline engines.

The larger of the two pistons was taken from a diesel test engine after 480 hours operation (the Caterpillar No. 1-A Test) and shows clean, deposit-free ring grooves. The smaller was removed after test in a gasoline engine (the Chevrolet 36-hour Test) and reveals no varnish-like deposits on the piston skirt.

Here's graphic proof of two important properties of this new motor oil: improved detergent-dispersant action and greater oxidation stability.

These two properties, proved by laboratory tests and confirmed in extensive field service, mean superior protection under the most severe conditions of high operating temperatures and prolonged periods of operation. Engines stay clean, free of harmful deposits. The results: longer engine life, more miles and hours between overhaul, and less maintenance . . . even when the going is tougher than ever.

New STANOLUBE HD-M Motor Oil offers these two properties in addition to the same qualities of corrosion resistance and freedom from foaming which helped make STANOLUBE HD a preferred lubricant for heavy-duty applications during the past nine years. To make the best use of this new and better motor oil, ask for the services of the Standard Oil lubrication specialist in your area. Phone your local Standard Oil Company (Indiana) office or write Standard Oil Company (Indiana), 910 South Michigan Avenue, Chicago 80, Illinois.

A COMPLETE LINE OF MOTOR OILS FOR EVERY HEAVY-DUTY SERVICE NEED

STANOLUBE HD-M is recommended for all internal combustion engines. It meets U. S. Army specification MIL-0-2104. This lubricant provides excellent cleanliness, low wear rate, and low oil consumption under severe operating conditions. Available in all SAE grades.

STANOLUBE S-1 is recommended for use in automotive, diesel, or gasoline engines where other heavy-duty oils cannot control deposits caused by operational severity or adverse fuel quality. It meets requirements of MIL-0-2104 and the requirements for "series 1" type oils as well. Available in all SAE grades.

STANOLUBE HLA is recommended for use in supercharged diesel engines and in other engines that operate under the most adverse conditions. It meets the requirements of MIL-0-2104 and the requirements of "series 2" type oils. Available in SAE 10 and SAE 30 grades.

COMPANY STANDARD *(Indiana)*

Tell It To The Judge

Continued from Page 96

should be considerate of his local accuser's opinion—and reputation. And he should be truthful and speak with the assurance that comes with speaking the truth.

Home Office Consultation

WHEN a driver faces a serious charge, he probably will speak by long distance telephone with his home office or with legal advisers appointed by his company. During the call he will be advised about what he should do during the time that a company representative is on the way to his aid. However, if the case is urgent—as a manslaughter case would be—or if the driver's fleet is unable to send aid to the driver, he should be prepared to cope with the situation himself. For the long-haul driver this is potentially the most important aspect of his training. The early events in a trial often determine its outcome.

The driver should hire local legal aid when a fleet representative or immediate advice is not available. His fleet should urge him to do so, for insurance payments and other damage costs are often determined on the findings of a trial. And a lawyer's fees are usually more than repaid in the court's verdict. Even admittedly-guilty drivers may benefit by a reduced sentence.

A truck driver charged with leaving the scene of an accident in Missouri explained that he had overlooked the jolt of the collision as a bump caused by an unrepaired hole in the highway. Because of the seriousness of the charge, he should have sought professional help, but he thought his reasonable explanation would be adequate.

Under the persevering examination of a clever prosecutor and remorse upon learning the accident had caused injury to two children, the driver pleaded guilty in a quick preliminary hearing and let the court rush through his trial. Had he secured a lawyer, he would have pleaded not guilty, would have demanded more time before trial, and probably would not have been sentenced to the year he spent in jail—if found guilty at all.

How to Find a Lawyer

FINDING a reliable attorney in a strange community is difficult, but there are ways to be reasonably sure of the competence of the man employed. Most towns where courts are located have a group of attorneys living near and earning their livelihood in the court. Such a group is usually organized into a bar association. Anyone connected with law enforcement will be able to tell the driver who the officers of the bar association are. These officers have been elected to positions of trust by their fellow lawyers and, therefore, are likely to be the best men for the driver to employ.

If no bar association exists, a driver may be able to prevail on the arresting officer or the judge of the court to recommend a lawyer. In this way, the driver is apt to be represented by a man on friendly terms with the officer or judge.

The nation's truck drivers are, as a group, probably the best drivers on our highways. But for a group which is bound to have a number of its members called before judges for infractions of some of the confusing mass of laws that control traffic, truck drivers are too often inadequately prepared to "tell it to the judge."

END

Please Resume Reading Page 56

Fleet Wins Awards

Continued from Page 74

its equipment in operation. It depends upon the alertness and cooperation of the driver in his reports.

This man, under another type of management, where reports on equipment might be less important might be an excellent employee. With the Badger fleet, however, a man who failed to notice or report a mechanical fault would be an accident hazard.

One thing Carey does stress is speed. The driver may know how to handle his truck but he never knows what conditions are just around a bend or what a "Sunday" driver will do. So around Badger, the drivers are continually warned that high speed is a cause of accidents.

Driver is in Charge

ANOTHER safety idea at Badger is that the driver is the captain of his truck and he, and he alone, decides whether to go out on a run and when that run will start. If he doesn't want to venture out into rain, snow or fog, the other drivers are not permitted to needle him about it. Carey would rather be behind on a scheduled run than to have an accident.

As Carey says, "A man may refuse to go out at one time under comparatively mild conditions because he isn't up to par. At another time, he may go under impossible conditions and still not have an accident." And, always, the driver determines how long it will take him to get there. If conditions are adverse, the man may start a lot earlier than another man, but Carey depends on each man's judgment.

The driver also determines whether to lay over if storm or fog develop. Here, again, the driver's physical and mental condition determines his conduct. While the loads are sometimes late, there are fewer accidents. This full confidence in a man's judgment tends to make him put forth his best effort.

All drivers might not function under such a system. Carey's experience, however, enables him to determine whether the man's judgment is sound and intuition tells him whether he has a "gold bricker" on his hands.

In hiring a driver, accident records are carefully investigated as well as honesty. Neighborhood taverns are "off limits" for his drivers during working hours. Along educational lines, Carey has a safety meeting twice a year, to which he invites the wives and sweethearts of the drivers to increase the driver attendance.

Under the Carey system of safety, the drivers know that bad conduct by some drivers may penalize all of the others. In other words, abuse of privilege may end in loss of privilege. If some new driver is hopelessly bad in some respects, he is apt to be reminded of his shortcoming by fellow drivers.

Carey handles each incident on an individual basis. If some customer complains about a driver, Carey puts an old driver in his place to make any adjustment necessary. It it is a case of personalities, another driver is assigned that run.

No bonuses are given on the accident record nor are penalties imposed. Carey attempts to reward good conduct by cooperating in every way possible. During deer hunting season, for example, they were very short of drivers. By asking customer cooperation, Carey was able to permit all the men who wanted to, to go deer hunting. The men appreciate this willingness to cooperate in their personal plans and react accordingly when extra work is needed or by cooperating in safe driving.

END

Please Resume Reading Page 76

. . . Walter L. Luli, named chief engineer of the coach division of The White Motor Company, Cleveland, Ohio.

. . . Howard E. Robinson, vice president in charge of sales for the Fram Corp., Providence, R. I.

. . . New officers of McCabe-Powers Au Body Co., St. Louis, Mo., are: Edward J. Powers, president; Robert J. Sonde man, vice president; R. Brooke Dal vice president; Frank A. Wagenfuehr Jr., secretary and John J. Powers, tre surer.

. . . Harry D Smith, executiv vice president, Ba rett Equipment C

. . . F. J. Hurn, elected to the board of d rectors of S. Smith & Sons, Ltd., Londo England, will remain in charge of th motor truck accessory division of Smith Motor Accessories, Ltd.

. . . Robert E. Huthsteiner, president of Cummins Engine Co., Columbus, Ind.

. . . Men of the Timken Roller Bearing Co. Canton, Ohio, recently promoted. R. A Schimpf, to Chief Works Engineer; H. J Urbach, to Executive Engineer; C. M Maratta, to Chief Consulting Engineer; and L. A. Holder, to Chief Mechanical Engineer.

. . . John L. Wilson, vice president and director of Anheuser - Busch, Inc., has been elected a director of Mack Trucks, Inc.

. . . Koppers Co., Inc., announces Nicholas Kay is assistant manager of the Piston Ring Division's Contracting Department, and Thurman F. Naylor has been appointed manager of the division's Contracting Department.

. . . J. A. White, manager of government sales for Mack Trucks since 1946, has been elected a vice president of Mack Mfg. Corp.

. . . Harry J. Holbrook of Borg-Warner Corp., Chicago, as Director of Consumer Durable Goods Division, N.P.A.

(turn to page 106, please)

Introducing . . .

Continued from Page 104

. . . COURTNEY JOHNSON, assistant to the chairman of the board of the Studebaker Corp., as director of the motor vehicle division of NPA.

. . . HOWARD P. GROVE, as general sales manager for the United States, for Willys-Overland Motors, Inc., Toledo, Ohio.

. . . RAYMOND E. KLUG, formerly associated with Keeshin Motor Express Co., has joined Pacific Intermountain Express.

. . . CHARLES GLOCKE, former field service manager, now manager of the service division of Four Wheel Drive Auto Co.

. . . NEAL HIGGINS of International Harvester Co., Chicago, has been named director of the Construction and Mining Machinery Division, National Production Authority, U. S. Department of Commerce.

. . . EDGAR C. BOTTS, JR., Chicago wholesale sales manager for lubrication equipment, Stewart-Warner Corp.

. . . T. H. ROBERTS, sales manager of Mack Motor Truck Corp. at its Dallas, Texas, branch.

. . . M. S. WHITTINGTON, motor truck branch manager at Seattle, Wash., for International Harvester Co., appointed assistant manager at the company's Spokane, Wash., district office.

. . . ARTHUR F. SCHROEDER, as factory manager of the Timken-Detroit Axle Co. plant at Newark, Ohio.

. . . E. J. DINKEL, secretary, Mack Trucks Inc.

. . . DONALD W. ARNDT, as assistant general sales manager of the Marvel-Schebler Products Div., Borg-Warner Corp., Chicago.

. . . NORMAN A. STRANG, appointed advertising manager of SKF Industries Inc., Philadelphia.

. . . LEO F. HUNDERUP, as vice president and assistant general manager of Greenfield Tap and Die Corp., Greenfield, Mass.

. . . ROSS M. GODSCHALK, as regional manager of the Minneapolis region, Dodge division of the Chrysler Corp.

. . . NEAL HIGGINS of International Harvester Co., Chicago, appointed director of the Construction and Mining Machinery Division of NPA.

. . . ROY E. JORGENSEN, former chief engineer for the State of Connecticut, has joined the staff of the National Highway Users Conference as engineering counsel.

. . . B. V. RONCO, chief engineer of Morrison Steel Products, Inc., Buffalo, N. Y., manufacturers of automotive stampings for White, International and Mack trucks.

. . . HAL C. FARRELL, as assistant to the managing director, The National Council of Private Motor Truck Owners, Inc.

(TURN TO PAGE 108, PLEASE)

Snap-on* Tools

"help a man make time—make friends—make money"

In plain words, Mr. Jalovec tells you why thousands of shops—tens of thousands of mechanics—look to the "Snap-on Man" for money-making tools. In actual shop experiences (case histories on request) mechanics report boosting income 20 to 40 per cent after replacing ordinary tools with Snap-ons. They're true *professional* tools—designed for speed, built for tough endurance. More than 4,000 to choose from. Brought right to the bench so you can pick and try them on the job. It's been "the time-saving way to buy time-saving tools" for more than 30 years. If you haven't one of Snap-on's 104-page FREE Catalogs, write—

SNAP-ON TOOLS CORPORATION
8026-I 28th Avenue
Kenosha, Wisconsin

*Snap-on is the trademark of Snap-on Tools Corporation

"YOUR Snap-on MAN"

Friendly—helpful—800 of them serve America's top mechanics—coast to coast!

Introducing . . .

Continued from Page 106

. . . RON WETHERINGTON, district manager of the reactivated territory around Philadelphia for Toledo Steel Products Co., Toledo, Ohio.

. . . GEORGE POE, who takes over for Russell Truman as supervisor of customer relations, Toledo Steel Products Co., Toledo, Ohio.

. . . SAMUEL SIMON, appointed district sales manager for metropolitan area of New York City for Thompson Trailer Corp., Pikesville, Md. His offices will be at 17 E. 42nd St.

. . . DUNCAN B. GARDINER, chief engineer, Vickers Inc., a division of Sperry Corp., Detroit.

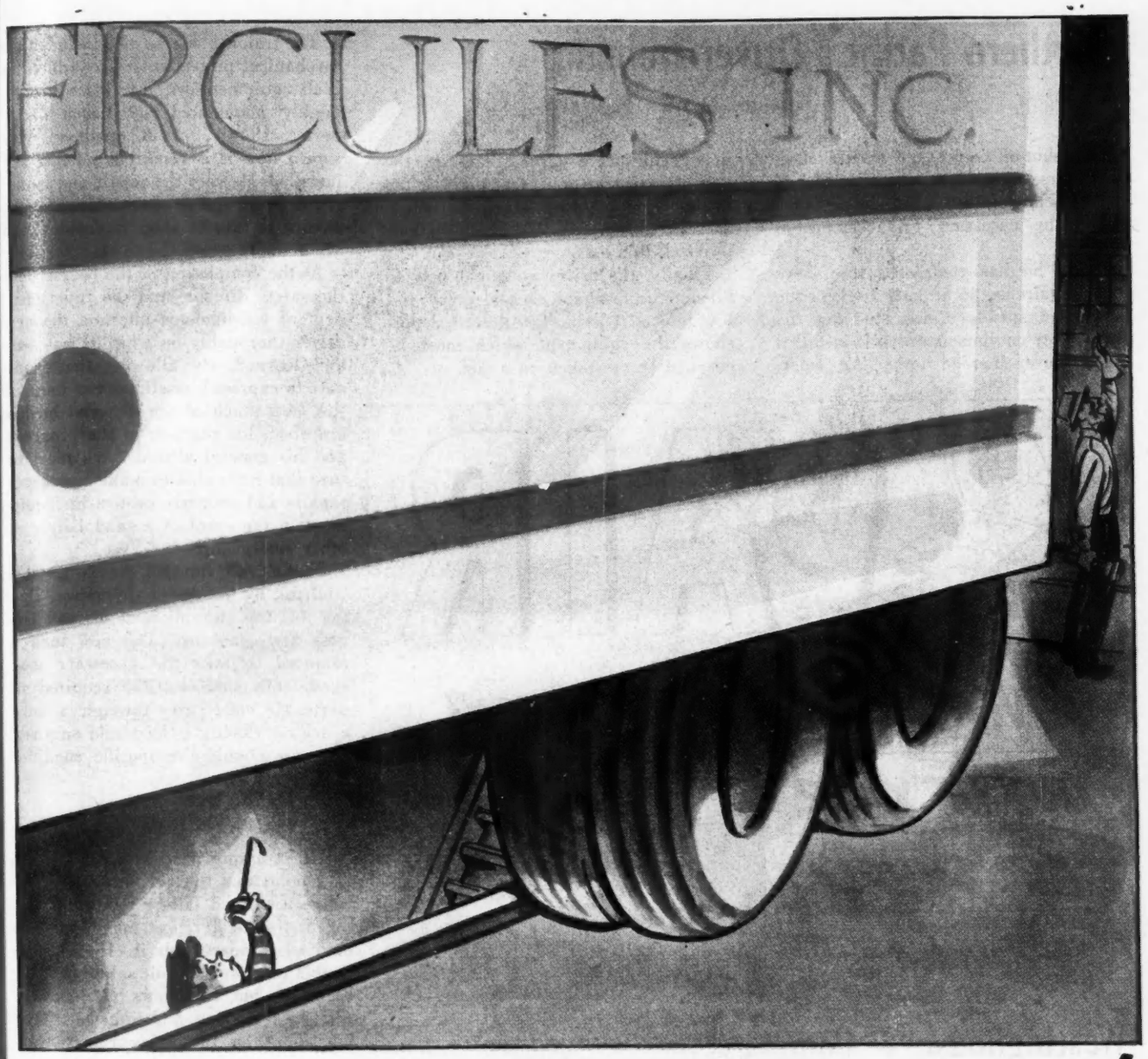
. . . PAUL E. FINICAL, in charge of sales promotion work, Pennsylvania Rubber Co., Mansfield, Ohio.

. . . T. A. ROBERTS, vice president in charge of national sales, Brown Trailers, Inc., Spokane, Wash.

. . . ELDRID A. KUNZE, manager of the retail service supervision department of the replacement tire sales division, B. F. Goodrich Co., Akron, Ohio.

. . . WILLIAM G. STERNBERG, elected a vice president of White Motor Co., in charge of Sterling Motor Truck Co., to be operated as a division of White.

. . . W. B. PROSSER, elected vice president, Perfect Circle Corp., Hagerstown, Ind.



Don't send a boy to do a man's job!

YOUR NEEDS in heavy duty lubrication are mighty tough. That is why Phillips tackles your lube oil problem from the very beginning.

First, we pick top notch crude oils. We blend them to combine good characteristics. These, we preserve with "*continuous cold fractionation.*"

Basically, this process separates oils at extremely *low* temperatures. No overheating, you see; no cracking complex lubricating molecules. No partial breakdown of the high quality you want in your oil.

Additives selected after an extensive series of full scale engine tests give extra protection against corrosion, foaming and acid action. You're also assured high detergency to wash away carbon and sludge.

Try it! Ask one of our on-the-job lubrication engineers to set up a side-by-side test of Phillips *66* Heavy Duty Motor Oil next to your present motor oil. Phillips Petroleum Company, Bartlesville, Oklahoma.

Oil for the Engines of Commerce

Phillips 66

PHILLIPS 66 HEAVY DUTY MOTOR OIL

Northern Pacific's Driver Training

Continued from Page 57

gency shut-off cocks, and should make the necessary closings as if there had been a line failure. He should then make the necessary replacements of lines.

After he has completed the above four requirements, he goes back to the shop and spends a day studying the emergency equipment which is installed on all over-the-road units. An emergency equipment card is kept in the cab of each tractor or truck which the drivers are required to check before and after each trip. He is shown how to check this list.

Finally, the driver is taught how to fill out the mechanical road delay and the defects reports. The defects report shows the equipment which must be checked before taken on a run.

The training course also includes the mechanical protective devices which his road equipment will carry He is thoroughly acquainted with each safety device, shown how it operates; then shown how it is repaired, rebuilt, and installed. He sees the repair and installation work being done. He has the chance to talk to shop mechanics who are actually doing the work.

At the completion of the course both the safety director and the superintendent of maintenance question the new driver thoroughly on what he has seen and learned. By allowing the candidate to express himself, we can find out just how much of the material he has absorbed, his reaction to the program, and his general attitude. We must be sure that he is able to make emergency repairs and properly protect his equipment in the event of a road failure or other emergency.

Passing all hurdles, he is given a trial run by the driver supervisor. During this test run, all sorts of road failures are simulated. The new man is required to take the necessary measures and make out the required reports. He must carry through, without coaching, exactly as he would on a regular run should the specific condition occur.

Training Brings Results

THIS training has developed to such a point that the old "cry sheet" becomes the "road failure report"; a dignified, technical report made out by a man who understands it. He not only is able to drive the unit safely over the highways but he knows mechanically what he is driving, and what he is talking about on the delay reports. He knows our shop, what has to be done to each unit, the limits, capacities, and ability of our shop staff when making repairs.

A further result of this program, has been seen in more efficient coordination between the safety and maintenance departments. We have greatly reduced our accident ratio and equally reduced the number of mechanical failures.

(TURN TO PAGE 112, PLEASE)

"I thought so, too, but she's wearing one of her latest creations."

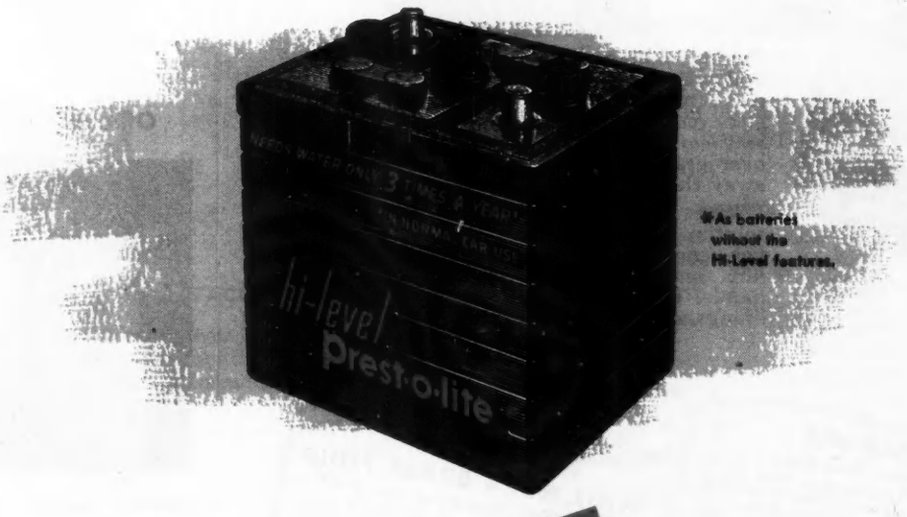
What it means to you to have batteries that need water only 1/3 as often

USING BATTERIES that need water only one-third as often* means you can save up to two-thirds of the time spent on costly battery maintenance every year . . . helps you to eliminate the constant danger and worry of having your batteries dry out and fail prematurely.

Hi-Level means a wider margin of operating safety, too, for every fleet operator, because Hi-Level gives longer life in tests conducted according to accepted life cycle standards.

Call your local Prest-O-Lite distributor for special fleet buying arrangements, or write directly to

PREST-O-LITE BATTERY COMPANY, INC.
Toledo 1 Ohio



PREST-O-LITE hi-level BATTERIES

Driver Training

Continued from Page 110

Under the fleet's record system, we tabulate all road delays of over five minutes' duration. When properly filled out, the driver's delay report will give us the type of failure, where it happened, when, the direction of travel, and what the driver did to correct the failure, if he did not think it necessary to call a mechanic. Further work may be needed on the unit and this has proved to be a good way to find out. We pass the driver forms on to the maintenance department which keeps a log and makes a monthly tabulation of mechanical road delays. The tabulations are carefully studied and compared with previous months. We have found that this enables the maintenance men to find the major causes of road failures and make necessary corrections to prevent recurrence.

Probably the best indication we have of the success of our training program is a simple comparison of the two years 1949-50:

Year	Total Mileage	Number of Road Delays	Average Mileage per Delay
1949	3,688,942	475	7,766
1950	4,356,592	527	8,267

The figures available for 1951 indicate that a considerable improvement will be made over the 1950 record.

Safety Awards Increase

AS AN indication that the joint safety-shop training is resulting in keeping equipment in safe operating condition, we note that we have presented 75 safety awards (Motor Vehicle Fleet Contest) to 55 per cent of our 135 participants during the year 1949. The following year, 83 awards were made to 55 per cent of our 150 participants.

In 1951, we are tied for second place nationally in our group. We believe that this shows a considerable improvement over the 1949-50 periods.

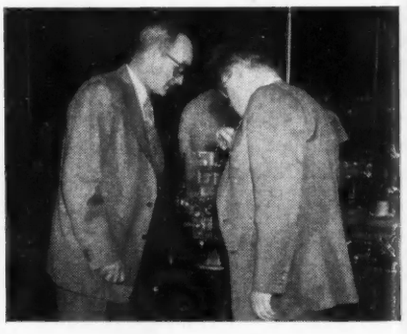
We further feel that our new driver training partnership between the safety and maintenance departments is necessary. It is essential to develop the high type of "professional drivers" which we want—those who know how to handle equipment in a safe and proper manner.

We also have found that the training program makes for closer cooperation between the drivers and the mechanical personnel, because each knows what the other is doing and why he is doing it.

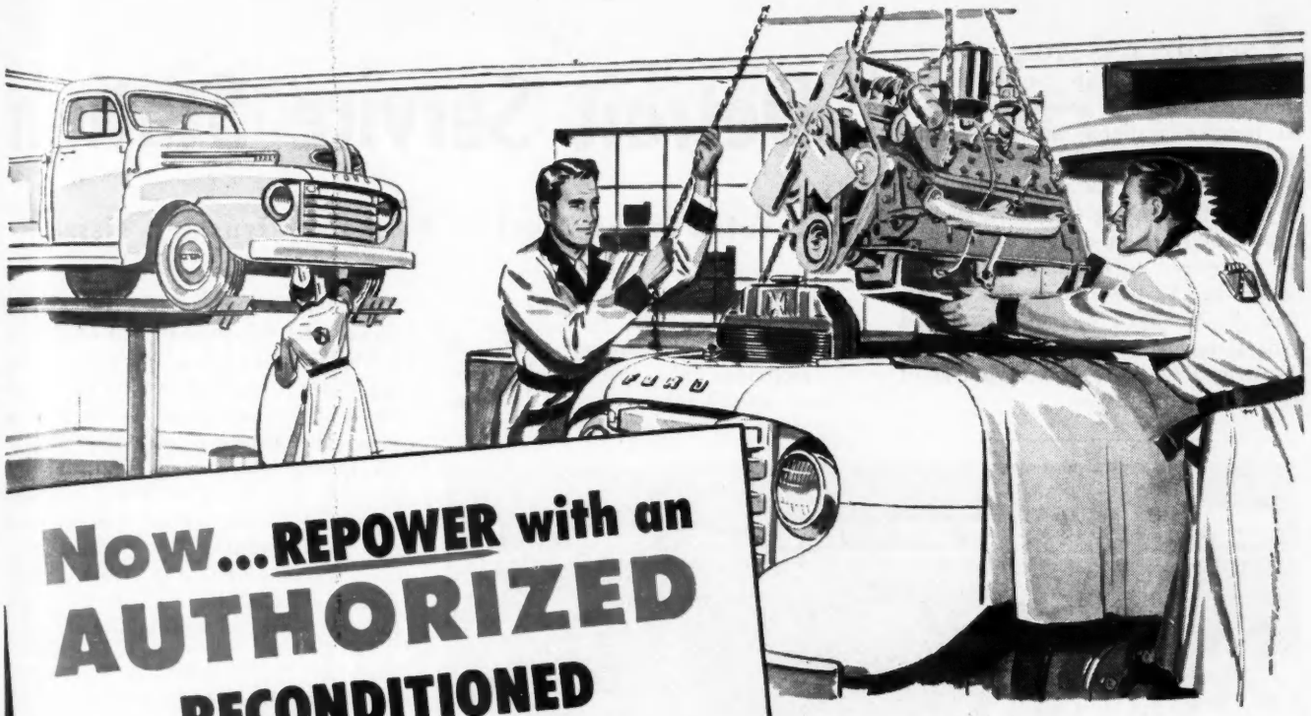
END

Please Resume Reading Page 58

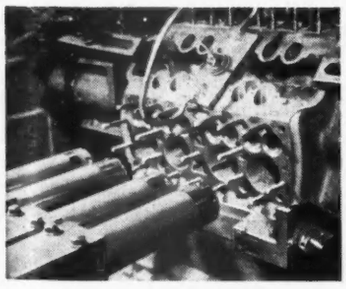
Officials Get "Know How"

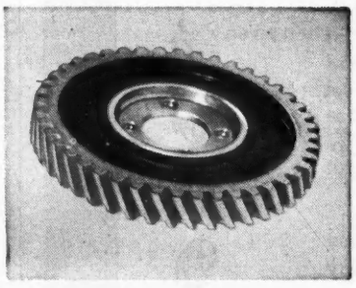


Getting briefed on the extra care taken in the manufacture of the Cummins DD (double disc) fuel pump, Robert M. Shaw (left) Technical Service Superintendent, White Motor Co., Cleveland, shown with Charles Sons, Eastern Service Manager, Cummins Engine Co., Inc., in the new DD fuel pump building at the Cummins plant, Columbus, Ind.



Now...REPOWER with an AUTHORIZED RECONDITIONED FORD ENGINE for less than the price of a major overhaul!





RECONDITIONED TO FORD-FACTORY STANDARDS

Here you see a *multi-reboring machine*, one of the many factory-precision machines to recondition engines from the ground up—to factory standards in a Ford-authorized, Ford-inspected plant. You don't get this in a major overhaul!

Over 150 new or completely reconditioned Genuine Ford Parts. Consider for example this new timing gear. Laminated construction gives more internal strength. Materials of highest quality are bonded together under extreme heat and pressure.

Save money with these AUTHORIZED Reconditioned units—Genuine Ford Parts!

CARBURETORS FUEL PUMPS DISTRIBUTORS GENERATORS
VOLTAGE REGULATORS STARTING MOTORS BRAKE SHOES

Compare these facts!

● When it's time to repower your high mileage Ford Cars or Trucks, compare these facts. If repairs go beyond a ring and valve grind job, cost comparisons can prove that an AUTHORIZED Reconditioned Ford Engine is the most economical way to *Repower*. Here's why:

An AUTHORIZED Reconditioned engine installation cuts labor and DOWN-TIME in half. And you get so much *more* with an AUTHORIZED Reconditioned Ford Engine. Literally *new-engine* performance! New power and economy for as much as 50,000 miles or more! Top operation backed by the Reconditioner's Warranty*!

One-day installation by appointment! Each AUTHORIZED Reconditioned Ford Engine comes complete—ready to install. With an easy payment plan you can arrange to repower your entire fleet. *See your Ford Dealer or independent garage . . .* and ask for an AUTHORIZED Reconditioned Ford Engine. ACT NOW and start saving today.

RECONDITIONED by authorized Reconditioner Ford Ford

***Look for this emblem** on the engine you buy. It's your assurance of the AUTHORIZED Reconditioner's Warranty. Any defect in material or workmanship showing up in 90 days or 4000 miles—whichever occurs first—will be remedied free of extra charge.

Detroit Service Station

Located in the heart of the heavy trucking district,

SPEEDY ONE-STOP SERVICE for any vehicle up to a tractor-semi-full-trailer rig, grossing more than 60 tons is available at the recently opened Motor Truck Services, Inc., Detroit 10, Mich. Located in the heart of Detroit's trucking terminals, at 4201 Central Avenue, this super service center represents an initial investment of better than $250,000, according to Mr. Wm. V. Monahan, vice president and general manager. It is believed to be the only independent establishment of its size in the midWest.

260-Ft. Fueling Lane

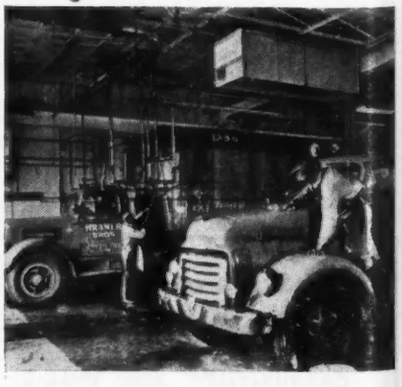
DEPARTMENTS in four connected buildings take care of all truck service except major repairs. In addition, there are offices, parts and accessories sales department, and restaurant in the administration and sales building. Several big rigs can be accommodated at the same time on the fueling lane. The approach measures 100 ft, the fueling island itself 60 ft, and the drive-off 100 ft. The island contains three diesel, four regular gasoline and one Ethyl pumps. The parking area can accommodate 150 trucks, with plenty of room for maneuvering, and the entire area is well-lighted at night.

Eight Service Lanes

EIGHT service lanes are provided in the maintenance department. Each lane is clearly labelled over the entrance as to the services available in it. The first two are designated Steam Cleaning—Washing; the next two lanes, Maintenance—Inspection; the next two, Complete Tire Service; the seventh, Lubrication; the last, Motor Tune-up. Each lane is designed for straight-through service, with two large overhead doors at each end.

Comfort for operators and mechanics is assured by individual overhead oil-fired space heaters in each section. Although the doors are opened frequently, Mr. Monahan reports excellent heat recovery efficiency with this zone-controlled heating system. Even when the doors are closed the buildings are well ventilated, using individual exhaust eliminating systems for the purpose.

Drivers relax in a cheerful, air-con-



Wash rack can handle 50 vehicles during 24-hour period. Heat is supplied from overhead unit, top right

Has Complete Truck-Trailer Service

facilities are available for every truck combination from pickup to dromedary

ditioned restaurant while their vehicles are serviced, making Motor Truck Services a one-stop service setup for drivers as well as trucks.

PM Inspections on Contract

ANOTHER exclusive service offered to fleet operators is a systematic periodic inspection of tractors and trailers. This includes checking of tires, alignment, brakes, batteries and safety equipment. A check slip is issued the operator certifying that the inspection has been made, along with a report of the findings. This service is sold to fleets on a contract basis, for a flat per-vehicle charge.

Streamlined Service Stressed

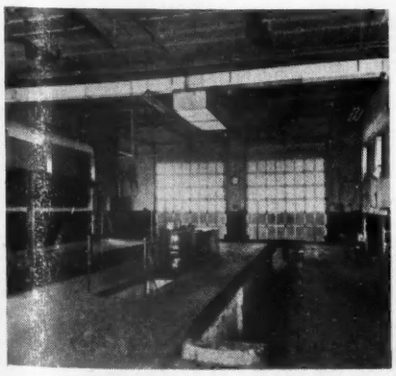
THE truck and trailer washrack has handled 50 vehicles in a 24-hour period. A complete maintenance check and trailer lubrication job can be done in eight minutes by the three-man inspection crew. In the lubrication department, five 25,000-lb capacity hydraulic lifts hoist a three-unit rig weighing 125,000 lb without unhooking.

Emphasis throughout is on speed. One example is the tire changing operation. Trucks go on the lift instead of hydraulic jacks, and wrenches are air-operated. All tire servicing equipment is of the latest design.

A large and varied stock of new truck tires is carried, along with recapping and vulcanizing services offered in this department. A new $2000 vulcanizing arm, capable of turning out 30 tires a day, has just been installed.

Other services are: Complete battery services for all types of trucks; engine tune-up; carburetor and distributor repairs; motor analysis; brake adjust-

(TURN TO PAGE 118, PLEASE)



Maintenance Inspection and Lubrication Department; 50 foot pits allow easy access to longest tractor-trailer

EXIDE ANNOUNCES . . .
THE SENSATIONAL

WHEN IT'S AN Exide YOU START

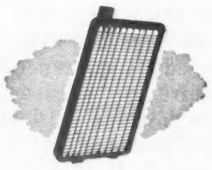
ULTRA START BATTERY

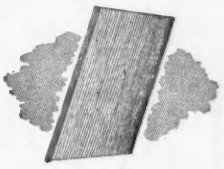
Out of the Research Laboratories of Exide, creator of the first automobile starting battery, comes a new battery with amazingly longer life.

Results of continuing tests are so startling that we hesitate to predict just how many years this battery *will* last. However, we do know this: put Exide ULTRA START Batteries in your trucks and, barring accident or downright neglect, you'll not have to buy replacement batteries for a long, long time.

HERE'S WHY EXIDE ULTRA START OUTLASTS OTHER TRUCK BATTERIES

TRIPLE CONTRIBUTION TO LONGER BATTERY LIFE





1. *SILVIUM* — THE CORROSION-RESISTANT GRID ALLOY

SILVIUM, Exide's newly developed alloy of silver, lead and other components, effectively defeats grid corrosion, a battery's most destructive enemy. Corroding tests show that SILVIUM grids last more than *twice* as long as ordinary grids.

2. *ACTIVE MATERIAL* —NEW FORMULA

The power capacity of your battery depends largely upon the active material in the plates. So effective is the new active material of the ULTRA START that full advantage can be taken of the benefits of an acid solution of lower specific gravity.

3. *PORMAX* — PRACTICALLY INDESTRUCTIBLE SEPARATORS

PORMAX is a plastic separator . . . tough, highly flexible, and extremely resistant to heat and acid. It has many times the life of separators used in ordinary batteries. Having low internal resistance, it increases cold-weather starting ability.

PLUS THESE OTHER OUTSTANDING FEATURES

VITREX RETAINERS, used with PORMAX separators, are unaffected by chemical or electrical reactions . . . ELEMENT PROTECTOR safeguards internal parts from physical damage . . . PLASTIC CONNECTOR SHIELDS help prevent short circuits . . . PLASTIC VENT CAPS, new type, prevent loss of electrolyte . . . IMPROVED SEALING COMPOUND stays tight in high or low temperatures . . . SHOCK RESISTANT CONTAINER has great mechanical strength and resistance to acid penetration.

Investigate NOW. Learn why the longer-life ULTRA START is the most satisfactory truck battery you can own.

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 2

Exide Batteries of Canada, Limited, Toronto

"EXIDE" "PORMAX" and "VITREX" *Reg. Trade-marks U.S. Pat. Off.* "ULTRA START" *T.M. Reg. applied for*

Spector Opens Boston Terminal

This terminal is said to be the most modern in the Greater Boston (Mass.) area. It represents an achievement for Spector Motor Service which began operations in this area in 1945, occupying a converted two-car garage. The present terminal has 5000 sq ft of dock space positioned to give maximum access. The building also houses an enclosed office area, drivers' lounge, a teletype room, dispatcher's office, and is equipped for 24-hour operation by a system of flood lights. In the plant itself, Spector has installed many materials-handling techniques which have been developed by personnel. These innovations have contributed to the speed of operation which has been the main selling point of the Spector system since it began. Construction was begun in November, 1950, and completed in April. Offices were occupied on May 7 when they were opened by a press preview with representatives from the government and the trucking industry. The terminal is now in full operation

Detroit Station

Continued from Page 115

ment; tarpaulin inspection and repair; complete inspection of brakes, lights, and safety equipment; oil filter service; steam cleaning; 24-hour road tire service anywhere in the city; heavy wrecker service, using an army 7-ton tank recovery unit.

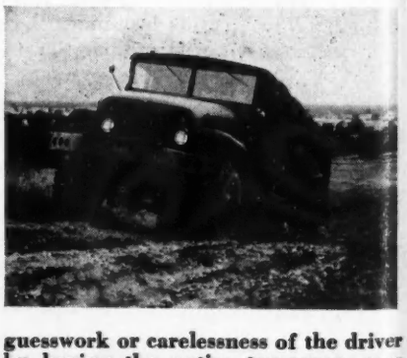
Where possible, Motor Truck Services sells nationally-known brands of replacement part and supply items.

Gasoline is Lube-Treated

ALL gasoline sold is treated with an upper cylinder lubricant at no extra cost to the buyer; although it costs 1/3 cent extra per gallon to offer this treatment. This not only saves operators the additional expense of buying the additive, but eliminates the space and time involved in storing and dispensing it. Premium and detergent type oils are available.

Hydromatic Truck

The new army 6x6 cargo-personnel truck has a hydromatic drive (see Page 96, August issue COMMERCIAL CAR JOURNAL). The adding of this type transmission eliminates much of the



guesswork or carelessness of the driver by having the entire two-range gear setup controlled from a knee-high box in the driver's compartment. This innovation is strictly military, but it may have many civilian applications when the details are released.

California's Transportation Story

Continued from Page 51

exhibit, several alterations in the building at Exposition Park were needed. Financial cooperation was the most difficult to obtain for this reason.

As a last resort, Venator went before the State Public Works Board with an idea that could not help gaining approval of the economy-minded officials. He proposed that a loan of $50,000 be granted instead of requesting an outright appropriation. The loan will be repaid from a 10-cent admission charge. The state group provided funds on that basis and work on the building began.

The job of building an exact scale display area was another major problem. Conferences with designers and contractors in various fields led Venator to engage Imagineering Associates, Inc., of Pasadena, who specialize in this type construction, to do the job.

Attendance so far has not been up to expectations, due primarily to lack of necessary funds for a good publicity campaign. Even so the exhibit is on a sound financial footing. Manager Venator reports the exhibit is grossing $10,000 a year with an operating cost of $3000. At that rate, the loan should be repaid in a period of about seven years.

The exhibit currently attracts abour 20 per cent of the total visitors to the museum and it is hoped this figure can be increased materially through the medium of a more attractive "come on." An animated transparency is in the works as a means of selling the exhibit to more visitors, and management expects the exhibit will net $10,000 a year within the near future.

What the Exhibit Is

THE transportation display occupies a table 5-ft. deep, behind glass, which extends around the entire balcony of the Hall. On the table is an accurately scaled miniature landscape or diorama. An automatically controlled lighting system alternately brightens and dims each section, while an overhead loud speaker provides a recorded commentary on the importance of transportation in each area—mountain, desert, suburban, agricultural, industrial, etc. This continues progressively around the room, so that viewers may enter the display at any point.

One of the attractions of the display is a double-track O-gage railway system, which runs entirely around the room. It is constructed to indicate typical rail installations in the various geographic and industrial areas—all in perfect scale. The scale throughout the entire exhibit graduates downward in size to the rear of the exhibit tables, giving the perspective effect of distance.

A number of highways with cars and trucks moving along their length also depict the importance and application of this form of transportation.

Bekins First to Cooperate

ONE highway user has seen the good public relations possibilities of the exhibit. Bekins Van and Storage Co. has worked out an arrangement with the exposition whereby the company distributes admittance tokens, along with advertising literature to the youth of all southern California schools who wish to visit the exhibit. A number of miniature Bekins vans may be seen moving along the tiny roads and highways of the exhibit.

At the start of the exhibition, an in-

(TURN TO NEXT PAGE, PLEASE)

Transportation Story

Continued from Page 121

vitation was extended to various forms of transportation to be represented at the show. The public relations advantages of such a project seemed attractive, and it appears as if more participation will result in the near future.

How Story Is Told

THE commentary, which is heard through loud speakers over the exhibit tables, includes all forms of transportation—highway, rail, aircraft, ship, pipeline, wire, telephone, telegraph and radio. The exhibit table is divided into 10 sections which the voice commentary describes.

The use of a progressive commentary does not seem advantageous. A new system is being worked out. The reason given was that is was very difficult to control the flow of spectator traffic to the lighted area which the voice was describing. Many visitors lost the significance of the comments as a result.

In its place will be a similar description worded in a way that will give additional information to a spectator regardless of the particular section he is viewing.

The Role of Trucks

IN THE first section, there is a view of typical California terrain with mountains, valleys, desert areas, rivers, etc. The comments introduce the subject of transportation. The second section shows various highways, with vehicles in motion.

A digest of the commentary follows:

"The trucks moving along the highway in the background play an important role in California transportation. One out of every three California communities depends solely upon motor trucks for its freight needs. Even in those areas served by rail, the trucks carry most of the goods. Trucks haul 73 per cent of all freight between Los Angeles and San Francisco and about two-thirds of the goods moving to and from Los Angeles Harbor.

"Most of this freight is carried by the "for hire" trucks, but they make up only one out of every seven trucks on the highways. The other six include the

(TURN TO PAGE 124, PLEASE)

★★★★★★★★★★★★★★★★★★★★★★★★★

JOBSERVATION

A shady business never results in a sunny life

★★★★★★★★★★★★★★★★★★★★★★★★★

Transportation Story

Continued from Page 122

thousands of bakery, dairy, oil company, and public utility fleets which provide essential transportation right to your front door."

Pipelines and Airlines

THE commentary then moves toward the third section, which shows some of the state's pipeline devices and an airfield with tiny scale-model planes in the process of landing, taking off, and in flight. The spectator then hears the following:

"The line of suspension towers seen coming out of the hills at the right carry overhead natural gas pipe lines which originate in the oil fields... The nation's first commercial airline had its birth here in California. Today a network of large modern airports covers the state...."

Transportation in Industry

THE spectator next is invited to view the fourth section of the large table, which shows a representative group of factory buildings, surrounded by various forms of transportation. The narration continues:

"We have said that transportation is the very life blood of modern civilization. California's industry and agriculture is able to support a population of 10 million persons because the state has the means of transporting the men, raw materials, and finished products that keep our economic wheels turning....

"The huge steel mill you see here symbolizes the arrival of California at a place of outstanding importance in industrial America. Improvement of transportation plus the vision and courage of western industrialists have made this possible....

"With steel made on the Pacific Coast, it has served as a magnet to attract other industries from the East, adding millions of dollars to California payrolls. By railroad, by truck, ship, plane, and pipeline, raw materials flow into busy factories and the finished product is transported to the four points of the compass...."

"Mountain" Industries

SECTION 5 shows the high peaks of the larger mountains made to scale as the commentary announces that even in the inaccessable heights, transportation has developed a natural resource in the tourist trade.

"The towering High Sierras, which once meant death and hardships to the Forty-niners, now are choice recreation areas attracting millions of visitors. In the spring, summer, and fall the High Sierras draw tourists, campers, fishermen, and hunters who travel to their favorite spots by automobile over high gear roads. In the wintr. skis and toboggans replace the fishing rod and rifle. Four national parks and many national forests and monuments lure visitors from all parts of the world. Modern transportation facilities have eliminated the dangers and made wilderness playgrounds out of the mountains.

(TURN TO PAGE 126, PLEASE)

Good Business

The young, apprentice Truck Mechanic dropped into a large pawn shop thinking that he might pick up a good hand wrench or two cheap. Noticing the large amount of guitars and revolvers in the pawnshop window, he sought to make conversation with the proprietor by inquiring: "Do you ever sell any of them?"

"Oh, yes," answered the proprietor. "Every time I sell a guitar, it isn't long until one of the neighbors comes in and buys a revolver."

Cherry Rivet Company

Lock Bolts

combine the advantages of bolts and rivets... increase strength... save installation time... save 50% in weight assure hi-clinch

Cherry Rivet Company Lock Bolts are high strength, structural fasteners specifically designed to lower overall costs. One man installs them with a special pneumatic tool. Installation time is less than ½ that of conventional bolts and nuts and similar high strength fasteners.

Installed Lock Bolts are 50% lighter in weight than equivalent AN bolts. Their tensile strength is equal to that of the same sized AN bolt, yet their shear strength is considerably greater. On installation, the Lock Bolt clamps the material being fastened tightly together, and securely clinches it under tension. The clamping action is sufficient to pull together a gap between sheets of as much as ¼".

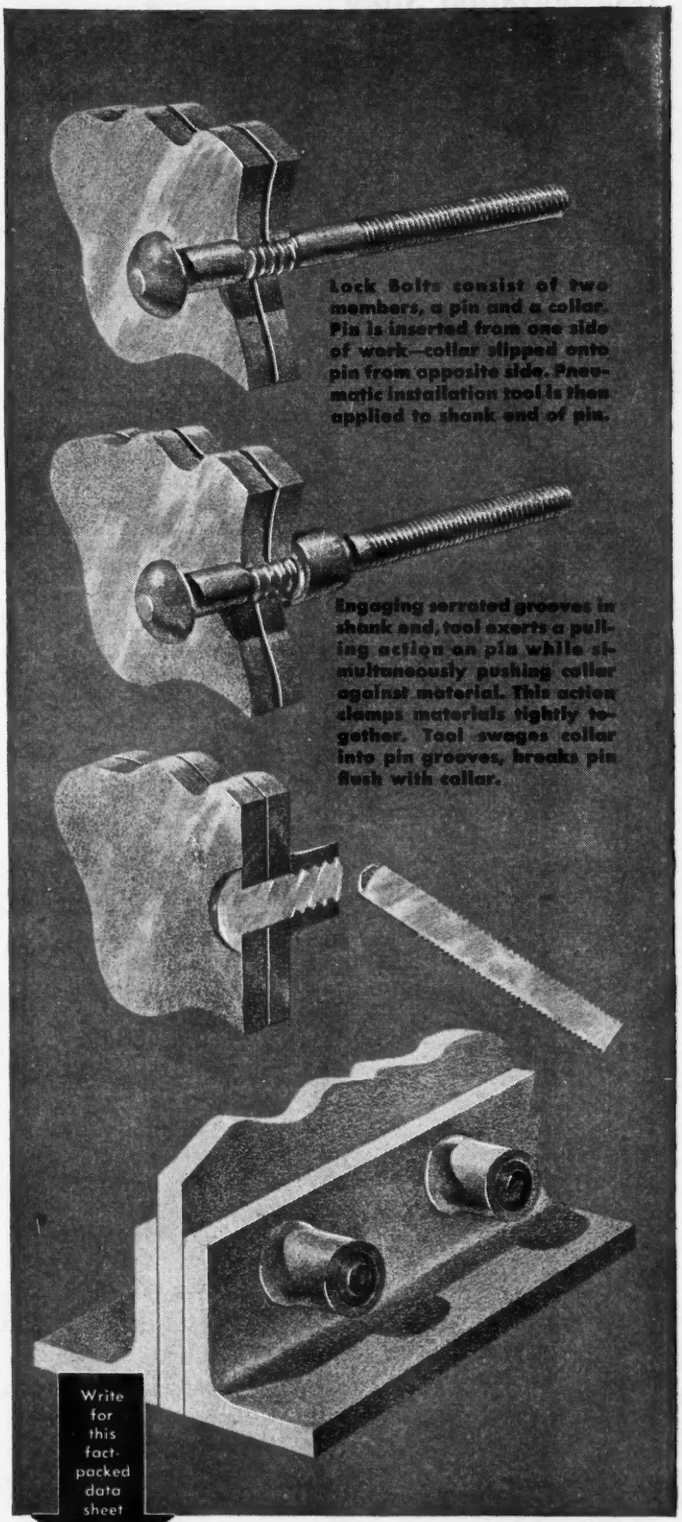
Combining high strength, light weight and rapid installation, Cherry Rivet Company Lock Bolts offer many production advantages you may apply in your business. For complete information write today.

Lock Bolt Availabilities

Materials: 75ST and 24ST Aluminum Alloy, Heat Treated Alloy Steel, Mild Steel
Diameters: 3/16", 1/4", 5/16", 3/8"
Grip Lengths: 1/8" to 1-15/16"
Head Styles: Pan, 100° Flush, Round, Brazier, 90° Flush

Cherry Rivet COMPANY
A Division of Townsend Company

Here's how Lock Bolts work



Write for this fact-packed data sheet

CHERRY RIVET COMPANY
Department
231 Winston Street
Los Angeles 13, Calif.

Please send me free of charge your data sheet on Cherry Lock Bolts.

Name_____
Street_____
Company_____
City_____ Zone___ State_____

Transportation Story

Continued from Page 124

"These mountains have been tamed to sustain life rather than take it. Scientific logging methods have brought about increased lumber production from the forests without depleting them. The invention of the caterpillar-type tractors and huge logging trucks has given the lumber industry greater mobility. Privately-built roads enable crews to go into formerly inaccessible areas, build camps and sawmills, and get the logs out...."

Down to Sea in Ships

THE spectator next moves to a harbor scene, complete with docks, cranes, boats, warehouses, trucks, and trailer combinations.

"A trip to any one of California's busy harbors enables the visitor to see the spectacular and romantic side of transportation. Trucks and trains bring a steady stream of manufactured goods, raw materials, and agricultural products for shipment to foreign lands. They return from the harbor loaded with imports from such far away places as India, the Philippines, Australia, South America, and Europe....

"Because of the efficiency of present-day transportation and communication, the trade that goes on in ports such as San Diego, Long Beach, Los Angeles, and San Francisco furnishes employment to hundreds of thousands of persons all over this country and in foreign lands...."

Petroleum Pipeline Comes Next

AS THE commentary continues, the lights shift to a model oil field.

"Petroleum is the cornerstone upon which modern transportation has been built, and our entire economic structure depends upon its efficient production and distribution.... Pipelines carry the crude petroleum to the refineries and in some instances direct to the shipping docks at the harbor.... Motor truck tankers also carry vast amounts of petroleum products hundreds of miles to supply factories, offices and homes with fuel. And the familiar neighborhood service stations receive all of their gasoline by truck tankers, which bring it direct from the refineries or storage tanks...."

And Back to Earth

TRANSPORTATION has placed the foods of the world on the tables of the world. Thus, the spectator next sees a panorama of rich California farm land, interwoven with highways. This is what he hears:

"California's wide range of climate is responsible for a diversity of crops unequaled by any other state in the nation. Of the 62 crops listed in the United States Department of Agricul-

(TURN TO PAGE 128, PLEASE)

Cop's Console

In Philadelphia, the new police, fire, and civil defense communications center has an RCA console that enables dispatchers to maintain constant contact with the city's motorized fire and police equipment. The new center has been built around the two-way mobile communications system

Transportation Story

Continued from Page 126

ture's statistics, California led all other states in the production of 29 commercial fruit, nut, and field crops. Approximately one-third of the nation's fruit and vegetable shipments originated in this state.

"This record has been made possible because the agricultural products of the Golden State can be shipped quickly anywhere. Just a few days after winter tomatoes have been picked in the Imperial Valley, they appear on tables in the East where the temperatures hover around the zero mark...."

The spectator moves on to section 9, where he hears:

"The citrus packing plant shown in this section serves as a splendid example to demonstrate just how transportation and communication work hand-in-hand to market California chops....After the fruit has been picked, it is transported by truck to the company packing houses where it is washed, polished, sized, graded, and packed...."

"Main Street"

AT THE last section of the transportation exhibit, the spectator is told:

"This typical American town with its Main Street exists because of modern transportation. Every man, woman, and child who lives here is dependent upon a free-flowing exchange of goods and services for his existence....

"All around you, you see the end result of transportation—the railroads, the highways, the air and sea lanes. As you sit at dinner tonight, try to guess the number of miles traveled by each item you see, use and eat. Many things came from foreign lands, none came from less than 10 miles. You will be amazed at the total mileage represented in your ordinary daily life.

END

Please Resume Reading Page 52

Oh Boy!

The wife of the Auto Parts Clerk was fuming as she burst into her neighbor's house one morning and stormed indignantly, "I'm so mad at Horace I don't know what to do!"

"Why?" asked her friend.

"Last night I dreamed that some blonde hussy was flirting with him, and he was purring like a kitten."

"Now, Mabel." the neighbor consoled, "it was only a dream."

"Well," Mabel exploded, "if he acts like that in MY dreams, what in the world do you suppose he does in HIS, huh?"

YEARLY TIRE COSTS DOWN $40,000.00

GENUINE Budd COLD TAPERED DISC WHEEL

Available in both standard and lightweight construction.

Here is a direct quote from Roland Heldt, General Manager of Heldt Brothers in Alice, Texas—"Without the savings brought about through the use of Budd wheels we couldn't continue to operate."

Since changing their fleet to Budd wheels, Mr. Heldt goes on, their tire cost has been reduced from $100,000 to $60,000 per year. This tremendous saving through the use of Budd wheels with 5° tapered bead seats has brought Heldt Brothers to the point where they will not accept a new unit unless it is equipped with Budd wheels.

Carl J. Taylor of Southwest Wheel and Equipment, Budd wheel distributor in San Antonio, tells us that Heldt Brothers are engaged mainly in heavy machinery hauling. 50% of this hauling is off the highways . . . through fields and undeveloped roads. During a year they will travel some three million miles.

Carl Taylor's help in recommending the proper wheel-tire combination was instrumental in these savings. He particularly recommended the application of 12:00 x 24 18 ply tires in the rear, and 14:00 x 24 18 ply tires on the front with Budd Heavy Duty Studs and Wheels for their fleet of 16 tandems.

If you find you are not getting your dollar's worth from your tires today, why not call your Budd distributor at the left. He'll be glad to survey your equipment at no cost.

The Budd Company, Detroit 14

FACTORY FLASHES

Short news items will appear in this new department each month. Gathered from regular news sources, the items will include various changes in personnel, sales or distribution methods, new factory construction, changes in trade marks, items on controls, production statistics, military contracts, etc., which refer chiefly to the manufacturer of materials used in the trucking industry.

Sales of motor vehicles in U. S. totaled 3,889,851 units in the first six months of 1951, a slight increase over the units produced in the first half of 1950.

New Address for Skilsaw (portable power tools) branches: 295 S. VanNess Ave., San Francisco 3, Calif., and 3038 Payne Ave., Cleveland 14, Ohio.

Cardinal Rubber Co. (truck mudguards) has appointed Velvac, Inc., Milwaukee, Wis., as their national distributors.

Chrysler Corp. has declared a dividend of $2 per share on outstanding common stock payable Sept. 12 to stockholders of record Aug. 20.

Mack Trucks, Inc., has announced the beginning of construction of its service parts plant on Route 29, Bridgewater, N. J. When completed the new buildings will replace Mack's present parts center in Plainfield, N. J., which building, in turn, will become available for engine manufacturing.

Sparks-Worthington Co., Sparton Automotive Division, has announced the appointment of E. W. Gentz as their sales manager, A. J. Reed to their sales division, and Alfred Collins as the new production manager.

Tobin-Arp Mfg. Co., Minneapolis, Minn., has announced their election of officers. Arnold W. Larson was named vice-president in charge of sales and Jack M. Taylor was named secretary.

Fruehauf Trailer Co. has announced that Frank Tully has been appointed manager of the stainless steel division. He has been in charge of the Cleveland branch of Fruehauf for 25 years.

Walker Mfg. Co. of Wisconsin has reshuffled their field sales organization. Gene Hartnett of Wilmette, Ill., has been made district filter sales representative for the Illinois-Michigan area. Einar C. Lovgren replaces Mr. Hartnett on the home office filter sales staff at Racine, Wis. William Craigmile assumes the job of district salesman in the North-Central area.

Ford Motor Co. has announced that John S. Snyder will replace John F. McLean as manager of the truck sales section, truck and fleet sales department.

ACF-Brill Motors Co. has made the following appointments: T. A. Duncan, vice president in charge of government contracts; C. F. Hoell, vice president in charge of finance and corporation treasurer; F. W. Kateley, vice president in charge of engineering; William Nelson, vice president in charge of the Hall-Scott division and assistant to the president; C. A. Sharpe, vice president in charge of operations, and W. J. Beatty and F. E. Dayes continuing in their positions as vice presidents in charge of sales.

Reo Motors' new branch at Atlanta, Ga., will be in charge of Barto W. Wilkins. The new office will be located at 956 Marietta St., headquarters of the former Reo truck distributor.

A separate compartment opens behind the cab, providing an area for separating the materials being hauled

Welded Fabrication in Unique Body

By C. W. Lytton
The Lincoln Electric Co.
Cleveland, Ohio

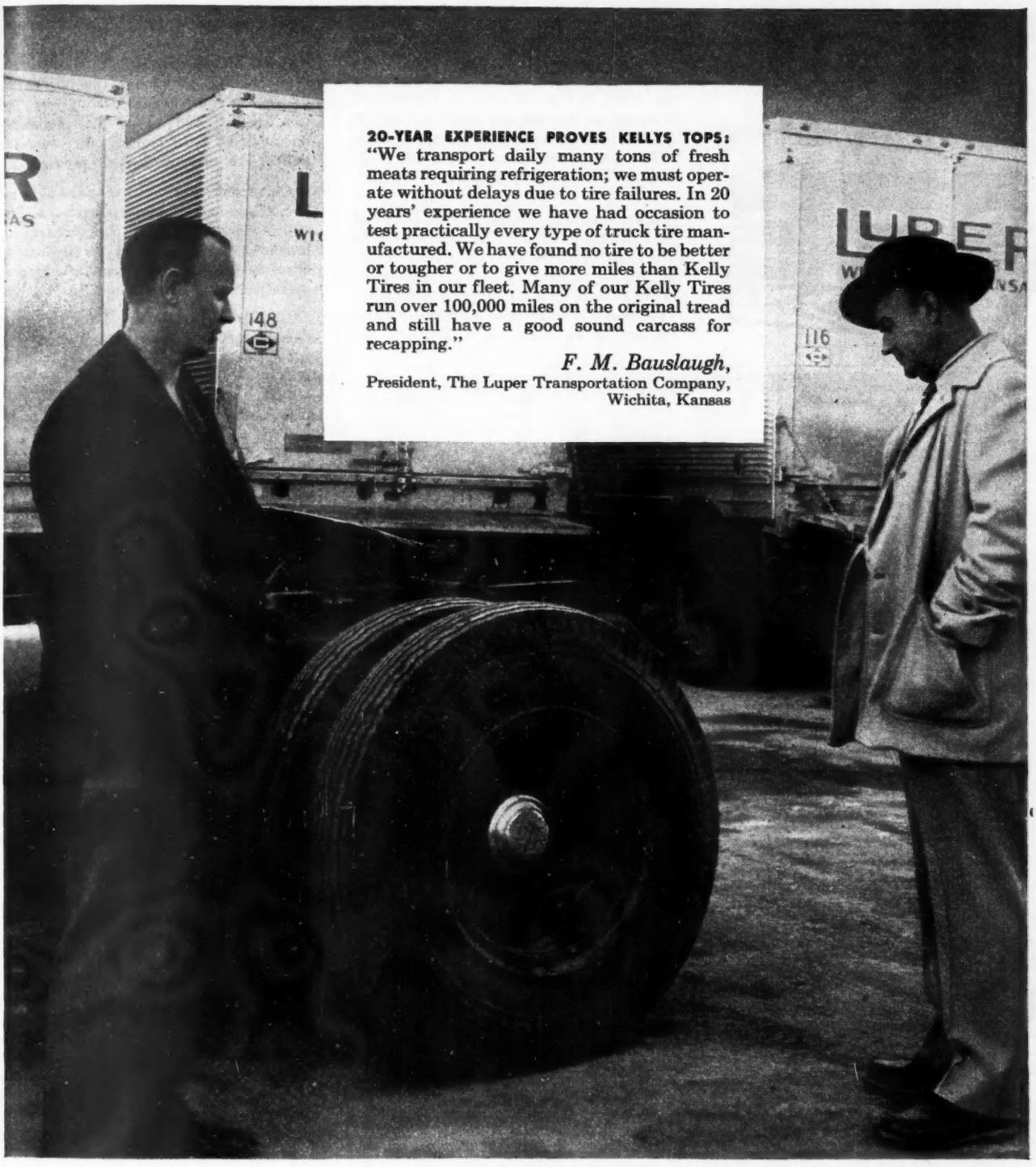
Carl Enis, Erie, Pa. designed and had built to his specifications a unique sanitary hauling and dump type body for a 1951 1½-ton Studebaker truck. Enis drew upon his experiences during six years in his business, to adapt the body to make loading, hauling and unloading operations more efficient, and to increase versatility of this type body. He salvages rags, iron, magazines, newspaper and other materials, and regularly hauls ashes and other debris, including bulky tree limbs and brush.

He designed two sliding steel doors on each side of the body, making the whole interior more accessible, and loading just a matter of throwing the stuff over the side. His body is about a foot lower than most, too. Sorting of materials is possible with inclusion of a separate compartment just behind the truck cab, with a door opening on one side of the truck.

His roof construction is an innovation, consisting of heavy canvas mounted on bows that can be moved easily, uprights sliding in and out of angle iron welded onto side panels. Bow height is adjustable, with pins and regularly spaced holes in uprights. Special brackets welded to the panel next to the cab hold bows when not in use.

Enis invested about $1,200 in his hoist and special body, but is realizing well on his money through increased efficiency and wider use of his unique truck. He estimates his body is about 500 lbs. lighter than conventional types, increasing his pay load; dimensions are roughly 5½ x 7½ x 11 ft. Steel floor and panels throughout are 10 gage. The floor was welded to 3-in. channels, on top of 4-in. sills, all gusset-reinforced with welding.

Practically only use of bolts in the fabrication is for making side panels removable; they butt up against and are bolted to 3-in. channels that bound the compartment at the forward end of the body.



20-YEAR EXPERIENCE PROVES KELLYS TOPS: "We transport daily many tons of fresh meats requiring refrigeration; we must operate without delays due to tire failures. In 20 years' experience we have had occasion to test practically every type of truck tire manufactured. We have found no tire to be better or tougher or to give more miles than Kelly Tires in our fleet. Many of our Kelly Tires run over 100,000 miles on the original tread and still have a good sound carcass for recapping."

F. M. Bauslaugh,
President, The Luper Transportation Company,
Wichita, Kansas

Truc Trac
Delivery

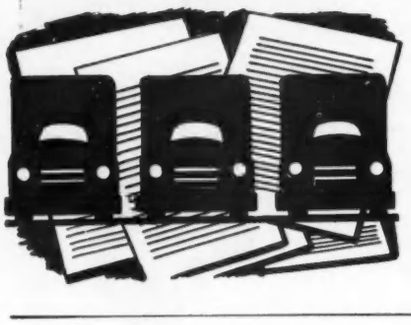
Truc Trac
Highway

Commercial
Heavy Tread

Dual Trac
Special Service

Lug Trac
Special Service

FLEET NOTES



Geo. F. Alger Co. terminal managers met recently at Dearborn, Mich., at which time announcement was made that a new branch terminal would be opened at Dayton, Ohio, and a new building constructed. Manager of the Dayton operation will be K. W. Huston, and the terminal address, 1747 Stanley Ave., just off the Dixie Highway north of the city proper.

The Magnus Chemical Co., Garwood, N. J., makes an oil additive called Metaffin. The company was recently called on by an engine rebuilder to supply a quantity of its product on a test for engine break-in. The chemical was added to SAE 10 oil in the proportion of 2½ qt to 16 qt oil. The treated oil stood up more than three times as long as the previously used break-in oil and showed very little discoloration. The rebuilder also found that the engines under test started easier with less "friction smoke" and noise. The makers of the additive have invited other motor rebuilders to investigate their product.

Capital Freight Lines, Inc., Columbus, Ohio, has appointed Charles E. Preston as manager of the Columbus terminal. In the same fleet, Fred C. Tarbox has been named vice president in charge of operations and maintenance.

Davidson Transfer, Baltimore, Md., recently opened a new terminal in Richmond, Va.

Panther Valley Water Co., Lansford, Pa., has the honor of having a driver with 25 years of accident-free driving, Dennis Gallagher, retired after 40 years with the company, recently received the driver of the month award of the Pennsylvania Motor Truck Assn.

R. Selig Motor Service of Des Plaines, Ill., has a contract to carry mail between Chicago and Milwaukee, Wis., a star route awarded on the basis of low bid.

Seaboard Airline Railroad has been granted permission to extend its trucking service, which acts as a feeder for rail stations in North Carolina.

Apex Consolidators, Inc., has opened a union terminal for truck lines serving seven State Street department stores in the Loop area of Chicago. Truckers will unload at the terminal, and local deliveries will be made by Apex and the delivery receipts signed on the shipper's own waybill. It is believed by Apex that the consolidated terminal will eliminate long waiting periods for alley unloading position by larger trucks, and at the same time keep these larger trucks out of the congested area. If the system is successful, Apex said, the list of stores served by the system will be expanded.

Associated Transport, Inc., New York, reports a 13 per cent increase in operating revenues but a loss in net income during the first half of 1951, with a gross of $19,174,5.6 and a net income before taxes of $2,019.761. This compares with a revenue of $16,960.004 and a net of $2.117,748. It is worth noting, that with a higher gross revenue by 13 per cent, the net income is lower. In addition, there are more taxes on the industry being proposed in Congress, based on the belief that operating profits have increased.

Best Motor Lines, Dallas, Texas, has appointed William L. Fayle as their general sales manager.

Photos Wanted! American Trucking Associations, Washington, D. C., is looking for photographs of trucks loading, unloading, or hauling recognizable defense freight. ATA wants to tell the story in pictures of the part that the trucking industry is playing in national defense. Send glossy prints to ATA Public Relations Department, 1424 Sixteenth St., N. W., Washington 6, D. C.

(TURN TO PAGE 139, PLEASE)

Fleet Notes

Continued from Page 130

Pacific Intermountain Express reports that its gross operating revenue for the first half of 1951 was $9,347,788 compared with $7,182,754 for 1950, same period. The net income before taxes for 1951 was $1,226,938 against $1,205,542 for a similar period in 1950.

Roadeo Winners for the state of North Carolina are: James E. Tracker, Great Southern Trucking Co., straight truck division; C. W. Riley, Carolina Freight, Inc., single axle trailer division, and Lyle Hudson, Associated Transport, Tandem axle trailer division.

Midwest Transfer Co., Chicago, honored 109 safe drivers at ceremonies marking the second anniversary of the company's safe driving campaign.

Ruling has been made in Florida that provisions of the state's new law permitting seizure and sale of motor vehicles for failure to pay penalty charges for overweight cargoes was unconstitutional in an opinion handed down by Circuit Judge Claude Ogilvie, of Jacksonville.

Rodgers Motor Lines, Inc., Scranton, Pa., has a new terminal at Lyndhurst, N. J., at the foot of Rutherford Ave.

Inter-State Motor Freight System of Grand Rapids, Mich., will build a new terminal in Buffalo, N. Y.

Decatur Cartage Co., Chicago, has started construction of a new terminal in St. Louis, Mo., that will reach an estimated cost of $300,000. It will be completed in December.

Household Movers Assn. with headquarters in Springfield, Mass., have scheduled a September meeting at Bolton Pt., Lake George, N. Y.

Holland Motor Express has opened a newly-constructed terminal in Fort Wayne, Ind., that provides for under-roof space for 18 trailer units.

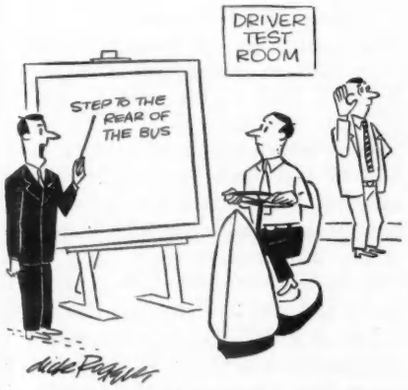
Super Service Motor Freight, Nashville, Tenn., has appointed Roy M. Wilkins director of accident prevention.

Hennis Freight Lines, Winston-Salem, N. C., recently had a celebration at which 17 driver awards were made for no-accident records.

Roadway Express, Inc., Akron, Ohio, has the official OK of the Interstate Commerce Commission to negotiate a loan for new equipment, among which will be 92 new trailer vans and other motor equipment.

Capital Freight Lines, Columbus, Ohio, has a new vice president in charge of operations, Fred. C. Tarbox, who was formerly safety director of U. S. Truck Lines, Cleveland.

Watkins Motor Lines, Inc., Chicago, the Trailmobile Co., and Hunter Mfg. Co. pooled their efforts recently in a 70 hr test run of 1423 miles hauling frozen orange juice concentrate from Plymouth, Fla., to Chicago. The cargo arrived in good condition. Results of the test were unique in that one trailer, a pilot unit having a large mechanical refrigerating system, was compared with another having a dry-ice system, much smaller in size.



"Now yell it out once more. This time with your eyes on the road!"

CCJ News Reports

Continued from Page 27

1951 Domestic Truck Factory Sales by G.V.W.*

	5,000 lb and less	5,001-10,000	10,001-14,000	14,001-16,000	16,001-19,500	19,501-26,000	Over 26,000	Total
January	50,435	21,029	6,476	16,957	5,528	5657	3,180	109,262
February	43,207	16,940	6,639	14,767	4,676	5,320	3,285	94,834
March	52,948	25,003	9,487	17,987	3,719	5,786	3,305	118,235
April	51,290	21,638	11,179	18,605	5,165	6,304	3,302	117,483
May	52,991	22,082	11,389	19,837	5,052	6,652	3,458	121,461
June	51,390	22,181	7,854	19,266	4,683	6,875	2,823	115,072
Total—6 Mos. 1951	302,261	128,873	53,024	107,419	28,823	36,594	19,353	676,347
Total—6 Mos. 1950	284,781	122,532	41,546	87,598	20,710	17,877	12,610	587,654

1951 Truck & Trailer Shipments*

	May	Five Months
VANS		
Insulated and refrigerated	413	1,904
Steel	144	....
Aluminum	269	....
Furniture		
Steel		
Aluminum	177	177
All other closed-top	1,977	13,414
Steel	1,141	....
Aluminum	836	....
Open-top	224	1,776
Steel	94	....
Aluminum	130	....
Total—Vans	2,791	17,271
TANKS		
Petroleum	431	1,976
All other	61	221
Total—Tanks	492	2,197
POLE PIPE AND LOGGING		
Single axle	197	625
Tandem axle	230	851
Total	427	1,476
PLATFORMS		
Racks, livestock and stake	163	798
Grain bodies	99	299
Flats (all types)	830	4,069
Total	1,092	5,166
Low-bed heavy haulers	1,432	1,177
Dump trailers	95	475
All other Trailers	260	1,845
Total—Complete trailers	5,589	29,607
Trailer Chassis	332	1,398
Total—Trailer and Chassis	5,921	31,005

*—Industry Division, Bureau of the Census.

Trailer Tire Bottleneck Broken

A truck tire bottleneck which had held up the delivery of several million dollars' worth of Fruehauf trailers has been broken, by the Tire Mart, Inc., New York.

In less than four weeks, over 10,000 large truck tires were delivered to 52 branches of the Fruehauf Trailer Company of Detroit by the Tire Mart, one of the country's largest independent suppliers of tires. The deal is believed to be the largest single order for tires ever placed by a commercial firm with an individual supplier.

Fuller Adds Overdrive

Incorporation of overdrive in the latest model of the Fuller 10-speed transmission, to add to the flexibility of this "one lever—no gear splitting" innovation, has been announced by the Fuller Mfg. Co., of Kalamazoo, Mich.

By addition of overdrive in the Model R-950-C, Fuller adds a gear ratio of 0.779 to the high range, which incorporates additional ratios ranging from 2.10 to 1.00. This provides low range ratios of 7.45 in first to 2.76 in fifth. Reverse gear ratios are 9.89 in the low range; 2.78 in high range. It is built, like the non-overdrive R-95-C, in SAE No. 1 and No. 2 Clutch housing sizes.

The R-950-C weighs only 804 lb., with standard controls. It requires less space than a conventional transmission and amidship auxiliary.

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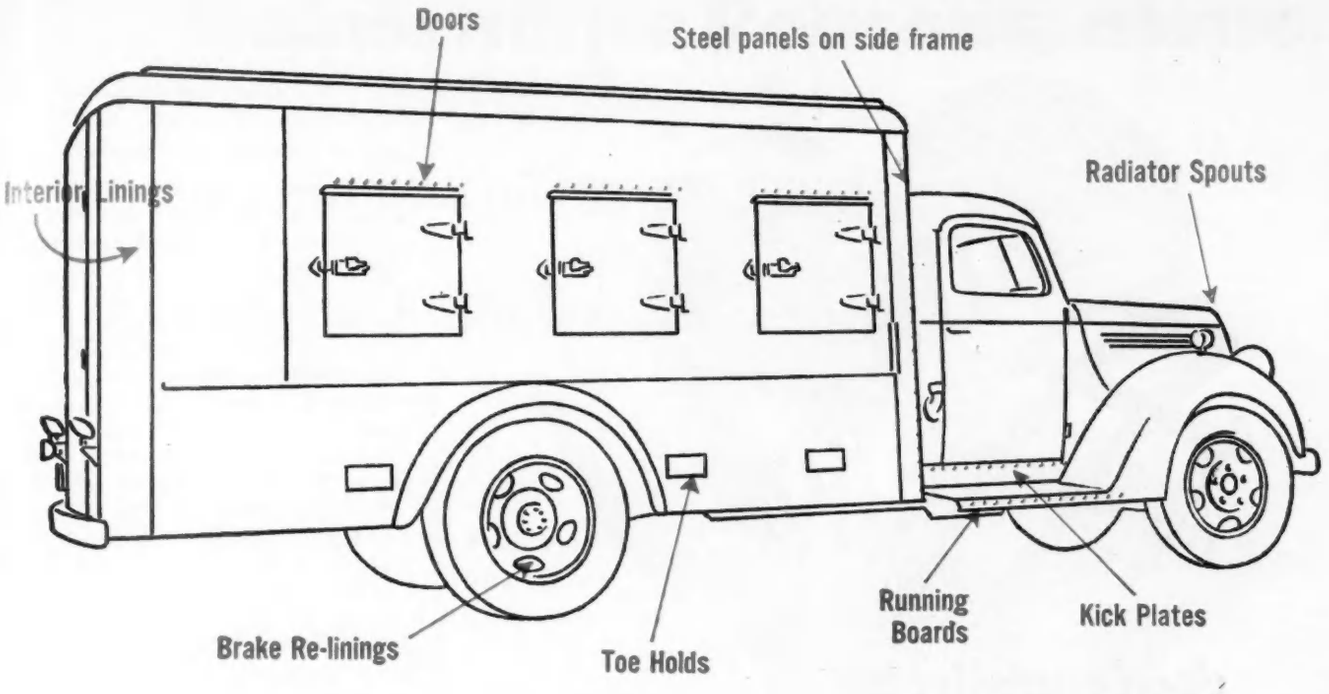
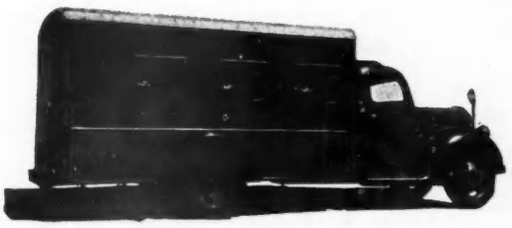




Explosive Rivets Save Time on all types of Fastening Operations

...help simplify the job... cut costs

Many experienced custom truck-body builders today depend upon Du Pont Hi-Speed Industrial Explosive Rivets to save time on all kinds of fastening work.

These modern fasteners make tough, trouble-spot jobs easy, and they speed up "run-of-the-mill" fastening operations. They're ideal for attaching side and door panels of sheet metal, interior linings and fabrication of doors for refrigerated vans. They simplify the design and assembly of steps, running boards, kick plates, tail boards, floors, shelves and special compartments.

Explosive Rivets are easy to use. You need no costly special equipment or extra power. You need not bother about close tolerances. And the smooth heads of Du Pont Explosive Rivets require no troublesome after-finishing, cutting, filing or polishing. Any operator can readily set from 15 to 20 per minute, for these Rivets need no bucking bar to set them securely in place.

And because Explosive Rivets have an extremely long grip range, builders use them (as the sketch shows) to fasten materials varying as much as .125" in thickness . . . a feature that means you can stock fewer sizes, save money and a lot of time.

Look into this easier, improved method of fastening. More and more truck body builders are now using Du Pont Explosive Rivets on every job. They've found that these better fasteners speed assembly operations and keep costs down all along the line. Write for manual. No obligation. E. I. du Pont de Nemours & Co. (Inc.), Explosives Department, Wilmington 98, Delaware.

DU PONT HI-SPEED

INDUSTRIAL EXPLOSIVE RIVETS

DU PONT
REG. U.S. PAT. OFF.

A Product of Du Pont Explosives Research

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

CCJ Reports

Continued from Page 140

Jersey Installs New Scales

Four new locations have been selected by the Highway Department for installation of the latest type truck scales. They are:

Route 6, near Route 23, Wayne Township, Passaic County;

Route 39, near Route 25, in Bordentown Township, Burlington County;

Route 25, near Green Street, Wood-Somerset County;

Route 25, near Green street, Woodbridge Township, Middlesex County.

Other locations under consideration are Route 17 near Hasbrouck Heights; Route 44 at Westville and Route U. S. 1 in the vicinity of the Lincoln Tunnel.

Truck Committee Has New Members

New members have been added to the Motor Truck Manufacturers Industry Advisory Committee, NPA. They are Lyman Slack, vice president in charge of truck fleet sales, Willys-Overland Motors of Toledo, and Ray L. Medler, Kenworth Motor Truck Corp., Washington, D. C.

Nada Truck Committee to Launch Comprehensive Program

The National Automobile Dealers Association's Truck Committee, of which R. S. Abbott of Alexandria, La., is chairman, met at NADA headquarters in Washington, D. C., July 16 and 17, and outlined a comprehensive, immediate and long-range program of services and information designed for motor truck dealers. The committee approved plans to hold a clinic for motor truck dealers as a feature of the NADA Convention in New York, January 27-30.

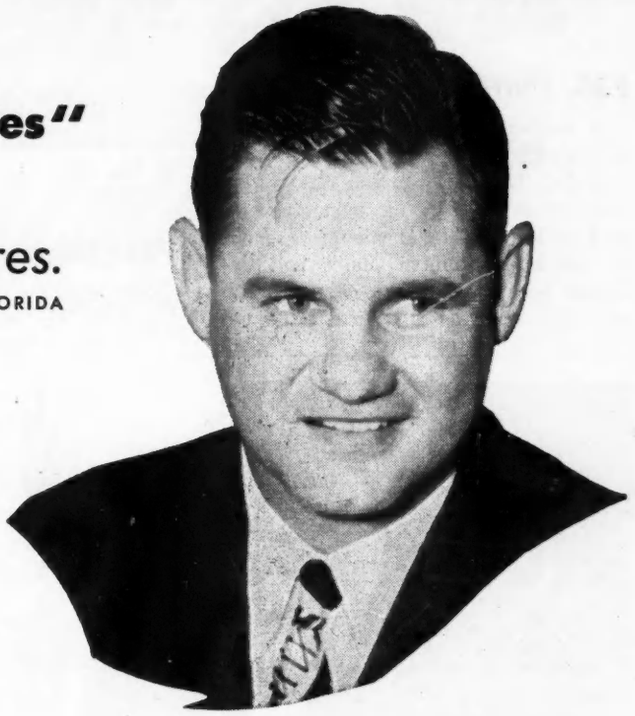
Shown left to right—Alfred W. Kahl, Des Moines, Iowa; D. C. Barnhart, Washington, D. C.; Chairman R. S. Abbott, Alexandria, La.; H. A. Marks, Wilmington, N. C.; R. J. Soulen, East Hartford, Conn.; and Hal Smith, Atlanta, Ga. Rudd J. Ross, Fort Smith, Ark., is also a member but was unable to attend the Washington, D. C., meeting.

(TURN TO PAGE 256, PLEASE)

"For Maintenance Reasons, alone we can't afford to use anything but Lindsay Bodies"

says James A. Ryder, *Pres.*

RYDER TRUCK RENTAL SYSTEM, MIAMI, FLORIDA



"Appearance and functional design were the deciding factors when we bought our first Lindsay bodies in 1948. However, our operating records soon showed that for maintenance reasons, alone, we can't afford to use anything but Lindsay bodies on our enclosed trucks," says James A. Ryder, progressive young president of Ryder Truck Rental System, Miami, Florida. "This construction really cuts body maintenance to a minimum and the savings—both in repair cost and lay-up time—are a mighty important consideration in a low margin operation such as ours."

Ryder Truck Rental System, a member of the National Truck Leasing System, operates a total of 1400 units in Florida, Georgia, North Carolina and South Carolina. The company has its Lindsay Structure bodies built to the individual fleet requirements of its customers by Miller Trailers, Inc., Bradenton, Florida.

Here are other "bonus" advantages you get with the LS patented method of construction—light weight, strength, safety and long life. Ask your nearby Authorized LS Body Manufacturer today for information on a handsome Lindsay Structure body built to your individual needs. If you do not have his name and address, write

LINDSAY LS STRUCTURE

Lindsay Structure, Inc.
5000 West Dempster St., Skokie, Illinois

U. S. Patents 2017629, 2263510, 2263511
U. S. and Foreign Patents and Patents Pending

Ryder Truck Leasing System had these LS Bodies especially designed to fit the operations of Swed Distributing Co., Tampa, Fla.

New Product Descriptions

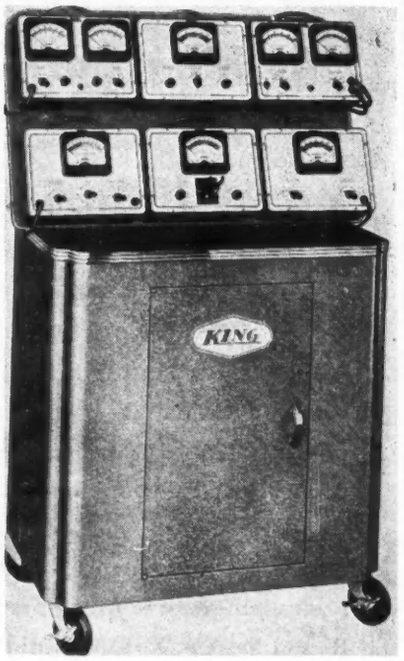
Continued from Page 78

P38. Plate Grinder

A vertical grinder has been added to the machine line of Lempco Products Co. The new machine has a vertical chuck, a 25½ in. swing, and is said to be capable of mounting some of the largest clutch plates and flywheels now in use. The new machine may also serve as a vertical lathe for turning short work pieces of comparatively large diameter, and can grind flat surfaces such as dies up to 18 in. x 18 in., according to the manufacturer.

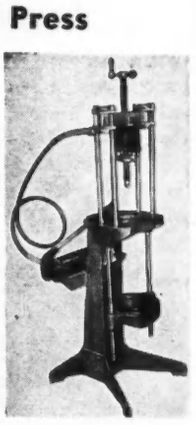
P39. Engine Analyzer

Six separate testing units are combined in this analyzer made by King Electric Equipment Co. There is a coil-ignition tester, a condenser tester, VAR tester, cam-angle tachometer



tester and an exhaust gas analyzer. Each unit locks in place on the display rack mounted on a portable cabinet. The top section may be ordered separately for use as a display and storage rack for wall or bench mounting where space is limited.

P40. Pedestal Press



A pedestal press for use with the Owatonna "Power-Twin" hydraulic puller makes it possible for users of the puller to work on pinions, bearings, gears, shafts and bushings for which a second tool was formerly needed. The set includes the pedestal and press frame and accessories which vary with the type of work being done. The press is portable, mounted on a 20 in. x 21 in. frame. The ram has a 17½-ton potential.

P41. Valve Puller

A universal type valve puller designed to remove stuck valve assemblies up to 1¾ in. head diameter is now being made by Snap-On Tool

(TURN TO PAGE 148, PLEASE)

OBJECTIONABLE OF ALL OIL CONTAMINANTS!

Exclusive Walker Patented "Laminar" Construction not only Removes Road Dirt, Metal and Other Abrasives—But Provides Extra Protection Against "Crankcase Moisture" . . . The Cause of Wear-Producing Acids and Sludge

● Of course it is important to remove solid abrasives which collect in the oil stream. Walker Oil Filters take care of that by famous "3-Way Filtration." But, according to unbiased authorities, the greatest enemy of motor oil and good lubrication is not abrasives. *It is "blow-by contamination" from the combustion chamber.*

In addition to creating soots, carbon and lead compounds, blow-by is the major source of "crankcase moisture"—or water in the oil. And *water in the oil is the most dangerous of all oil contaminants.*

Water in the oil is a "triple threat." It is the chief cause of sludge. It is the source of corrosive, wear-producing crankcase acids. It can destroy certain detergent or dispersant actions of the new heavy duty oils.

Because of the unusual moisture absorbing ability of the particular wood cellulose fibres used, Walker Oil Filters render a valuable *plus service* in the control of dangerous "crankcase moisture."

By selectively removing water from the oil, the Walker Oil Filter functions to prevent the formation of sludge by helping keep the moisture content of the oil below the "sludge danger zone" . . . it minimizes corrosive acid wear by absorbing the acids contained in the water it removes from the oil that passes through it.

Regardless of what filters you may now be using, get the benefit of *full protection* from all dangerous oil contaminants—including the most damaging of all . . . *water* . . . by installing Walker Oil Filter Cartridges.

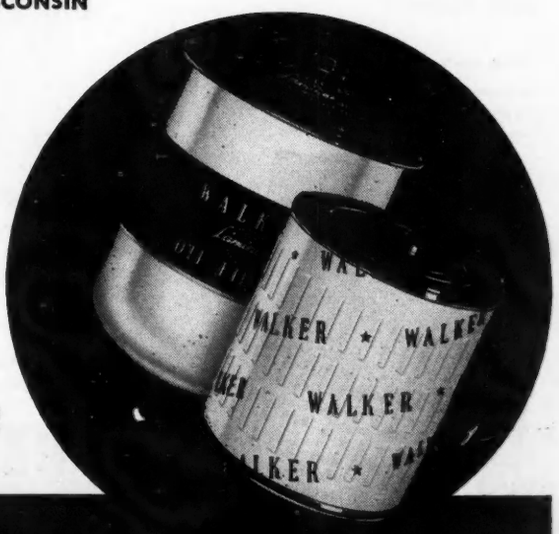
GET IT FROM YOUR JOBBER

WALKER MANUFACTURING CO. OF WISCONSIN • RACINE, WISCONSIN

WALKER

OIL FILTERS

WITH PATENTED *Laminar* CONSTRUCTION



New Products

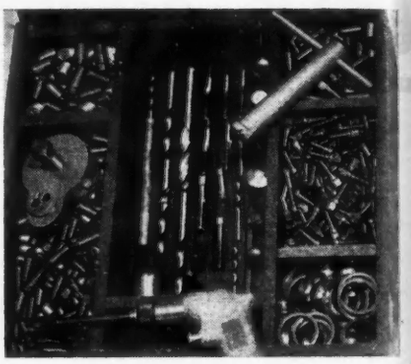
Continued from Page 144

Corp. The outstanding feature of this tool, as claimed by the manufacturer, is the swiveling action of the pressure screw in the yoke. This means direct pulling of all valves regardless of the angle the valve is set into the head. No checking of angles or additional parts are necessary as the swivel automatically centers over the valve and pulls it with no binding of the parts.

The yoke rests on two legs and may be placed in operating position regardless of where head studs are located.

P42. Block Repair Kit

Every tool and material needed for repairing cracked engine blocks and castings has been included in a kit prepared by Versick Mfg. Co. There are four sizes of plugs which are made



of block iron, a bantam air hammer for trimming and peening, a drill jig, reamer, facer, oversize valve seats and a complete set of taps and rotary files included in the kit.

P43. Push-pull Drain Valve

This new drain valve for radiators, blocks, line strainers, etc., is suitable for any assembly where frequent draining is necessary. The valve opens when pushed and closes when pulled. The tip of a screwdriver will actuate the valve control even in relatively inaccessible places. It will function at all temperatures, and is resistant to corrosion. The valve is available in 1/8 in., 1/4 in., and 3/8 in. national pipe thread sizes. It is made by Monroe Standard, Inc. Galion, Ohio.

P44. Spray Gun

A new type featherweight spray gun introduced by DeVilbiss Co. is designed for a wide range of spray work

(TURN TO PAGE 150, PLEASE)

STEP BY STEP

Communism tramples across nations.

Millions are enslaved by it—millions more tremble in the advancing red shadow.

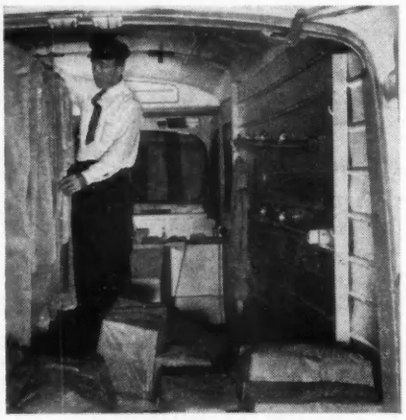
America stands as the great bulwark against this Communist threat.
Here we can still speak, work and live without fear.

The first terrible STEP toward national suicide is taking our freedom for granted.

BOHN ALUMINUM & BRASS CORPORATION
EXECUTIVE OFFICES • DETROIT 26, MICHIGAN
SERVICE DIVISION • HOLLAND, MICHIGAN
AUTOMOTIVE REPLACEMENT PARTS

TELEVISION!
"American Forum of the Air"... Every Sunday Evening on NBC Television
Consult Your Newspaper for Time and Station

BOHN



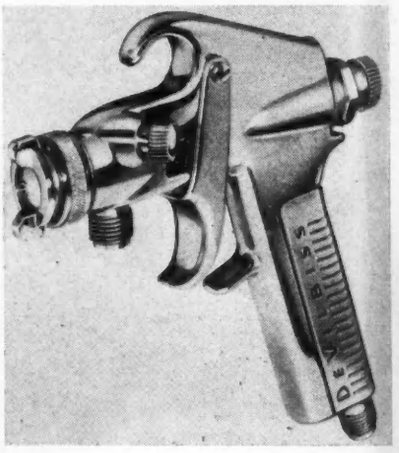
Disaster Convertible

Should a disaster occur in St. Paul, Minn., officials would have the services of the Model Launderers and Cleaners' fleet within 90 seconds. The interior of the Metro small delivery van may be changed from a truck area to an ambulance within that time. Pipe frames are taken from their place on the panels and clamped into ceiling and floor receptacles. They hold four stretchers. The total cost of the conversion including the stretchers was $35 per truck. The frames (left) hide in slots on the panels and are not in the cargo area. Civil Defense officials (right) examine the assembly

New Products

Continued from Page 148

from touch-up of small spots to refinishing of large objects. A wide selection of spray patterns may be made



by use of a fingertip control. The gun weighs 13¾ oz, will operate on 4 or 5 cu ft of air per minute at 40 lb pressure, and is designed for suction or pressure feed.

LATE PRODUCT FLASHES

HEAVY DUTY BATTERIES now being made by Willard Storage Battery Co. have been tested for their cranking power by having them turn over an engine until the battery was exhausted. After a 2-minute rest, the continuous cranking was resumed. Here are the results: Under normal conditions three repetitions were achieved for a total of more than 23 minutes. A battery was frozen in a cake of ice. It cranked continuously for 17 minutes. Another battery was heated to 200 deg. F. It cranked continuously for three minutes, given a minute of rest, then cranked for another three minutes. Its total was seven such repetitions. The battery is being made in the five major battery sizes.

(TURN TO PAGE 192, PLEASE)

• The same engineering skill and material that produced amazing RED BLOCK to *stop Brake Fade* for heavy duty truckers . . . and GREEN BLOCK to *stop Noise* for bus operators . . . assures unsurpassed quality and extra performance in *all* World Bestos truck lining.

For lightest delivery . . . for medium duty . . . or for the heaviest truck operations, World Bestos linings and blocks are engineered to-the-vehicle and to-the-job to give safer, smoother and more dependable stops . . . longer wear and trouble-free service that cuts maintenance to rock bottom!

. . . gives EXTRA performance in ALL truck brake linings

PRESCRIBED FRICTION TRUCK SETS
Full molded, top quality segments engineered for heavy-duty service . . . assuring long life, dependable performance with a minimum of fade and drum wear. Easy to install.

GRID LOCK
Top Quality Wire-Back Molded Sets manufactured to exact specifications for all light and medium trucks.

SETS FOR BONDING
Prescribed Friction and Grid Lock Sets packaged as undrilled, unchamfered segments to be used with World Bestos' exclusive new Pyrobond Film.

World's Most Complete Line of Finest Quality Truck Brake Linings and Blocks

GET IT FROM YOUR JOBBER

For Complete Information, See Your Jobber or Write Direct to: Heavy Duty Brake Division, WORLD BESTOS, New Castle, Indiana

WB

WORLD BESTOS
NEW CASTLE, INDIANA

At Your Service

Continued from Page 14

is initiated which is reflected back and forth across the combustion space. A large portion of the energy released in this way is not converted to power but causes a wasteful increase in temperature.

Seeking further information on the basic nature of detonation, the National Bureau of Standards is studying the conditions prevailing in the end gas. To provide the necessary data, apparatus has been constructed in which the end gas is simulated. In this apparatus, a mixture of fuel and air is inducted into a single-cylinder test engine, which is driven by an electric motor known as a dynamometer. Here the piston compresses the mixture to the conditions of temperature and pressure under which autoignition takes place. The pressure in the cylinder acts on a strain gage pressure pickup which is connected through a bridge circuit and amplifier to an oscilloscope. The pressure is thus shown on the oscilloscope as a function of crank angle, or time. At the same time, the light emitted by the autoignition is picked up by a photomultiplier tube which amplifies it and makes another trace on an oscilloscope.

From the NBS study, two distinct stages in autoignition have been recognized. In the first stage a low-intensity blue luminescent glow is apparent. This is followed by a sharp rise in light emission as the reaction goes into the second stage, during which detonation occurs. A small increase in pressure accompanies the emission of light in the first stage. At the start of the second stage, light emission and pressure both increase sharply until the reaction is complete.

Experiments have been carried out at NBS on several fuels of various chemical structures. In this way, processes occurring during the first stage of autoignition have been related to the detonation tendencies of the individual fuels. It was found that fuels of low octane number start to burn more readily when compressed as end gas than do those of high octane number. This is in contradiction to one of the tenets of a currently popular theory regarding initiation of combustion. According to this theory, those hydrocarbons having tertiary hydrogen atoms should begin to burn more readily than those with secondary and primary hydrogens. Yet many of the higher-octane fuels containing tertiary hydrogens were found more resistant to burning than those containing only secondary and primary hydrogens.

A correlation was also found between the amount of heat liberated in the first stage of autoignition and the detonation characteristics of the fuel. High-octane fuels did not liberate as much heat as low-octane fuels, and the amount of heat liberated was discovered to be an inverse function of the performance number for several of the fuels studied. These results definitely show that the reactions occurring in the first stage of autoignition have an important bearing on the tendency of the fuel to detonate.

END

Please Resume Reading Page 20

Where and Why of Engine Deposits

Continued from Page 58

system temperatures. Conditions in service that give similar deposits have not been well established. Fleets in such widely separated places as Houston and Buffalo have been affected.

From our studies, it was found that the type of fuel can strongly influence the nature and amount of deposit. Certain fuels produced hard brittle deposits that permitted valves to burn rapidly. Another fuel produced heavy soft deposits that did not induce burning at all. Most curious and significant was that other fuels which do not themselves produce deposits would fry the heavy soft deposits, previously laid down, to a hard brittle scale leading to valve burning. A valve on the point of burning could then be healed by employing the fuel giving the soft resin. These phenomena all occurred with low gum fuels, indicating that conventional gum content is not necessarily involved.

The mechanism of valve burning due to fuels seems to involve the formation of a heavy deposit on the valve fillet which then gradually flows onto the valve face, forming a uniform deposit over the entire seating area. It appears that valve burning is initiated when, at some point on the valve face, the deposit becomes brittle and then spalls. When this occurs, leakage of the hot combustion chamber gases causes local overheating of the valve which in turn results in incipient burning, guttering and, finally, in complete failure.

The important point in this mechanism is the effect of the different fuels. While some fuels form hard, brittle deposits, others seem to form soft, plastic deposits. The continual renewal of the deposits with fresh plastic material does not interfere with proper valve seating. If, however, a fuel giving brittle deposits, or no deposits at all, is then used, the deposit already on the face may bake and spall with subsequent valve failure. This change from one type of deposit to the other may also be a function of operating conditions.

Through the intake valve, the fuel moves to the combustion chamber. This area is a veritable chemical factory. Just to list some of the materials present is a task; there are oxygen, nitrogen, hydrocarbons, sulfur compounds, halogen compounds, tetraethyl lead, gasoline anti-oxidants, water, carbon dioxide, carbon monoxide, peroxides, and many unidentified oxidation products. If a heavy-duty oil is in use, there may be several other contributing materials present. Here the fuel and air with a little oil from the crankcase are subjected to extreme heat and pressure On the compression stroke, considerable reaction occurs before the main combustion process. As much as 15 per cent of the heat content may be set free by reactions during this period.

Combustion chamber deposits can be one of the most immediate problems of the car owner because of the increase in octane requirement and spark plug fouling caused by these materials. It is also well known that the nature of these deposits is a function of the oil, fuel, engine and operating conditions. As early as 1926, it was observed that oil type influences the character of

(TURN TO NEXT PAGE PLEASE)

Engine Deposits

Continued from Page 157

the deposits, while oil volatility influences the amount of deposits. Even in this early work, it was recognized that the character of the deposit rather than the amount influences engine operation. Today this has been associated with the increase in octane requirement and the occurrence of pre-ignition.

With the development of methods for rating gasoline and improved cracking processes, the petroleum companies produced higher octane gasolines. This permitted engine manufacturers to produce higher output engines with the expectation that suitable gasoline would be available. During the same time, oil consumption was reduced by better engine manufacturing techniques and improved lubricating oil quality. Today, however, a peak seems to be approaching in the available octane quality of the fuel and engines are again operating near the peak of performance bordering on knock. Unless greatly modified processing techniques are developed, it is unlikely that very much higher octane quality gasoline will be available in any considerable amount without added cost to the consumer. The problem of combustion chamber deposits is again becoming important, because manufacturers are trying to get just a little bit more from both the fuel and the engine.

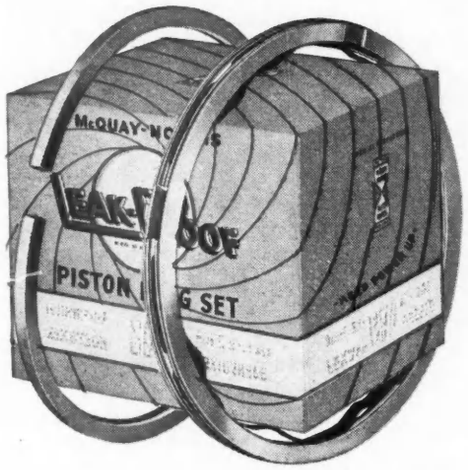
Among the problems with which we have dealt in this laboratory is the formation of varnishes and deposits in the ring belt area, the piston skirt, and other parts of the crankcase where sludges may settle out. Ring sticking and oil ring plugging are serious problems in many types of operation. As a matter of fact, it is probable that no one laboratory test will ever be devised which will measure oil ring plugging satisfactorily. This trouble may be caused by too many different sets of operating conditions. The engineer who

(TURN TO PAGE 160, PLEASE)

"Lessee now, is ah found a tire or is ah loss a truck?"

For one truck or a fleet it's Leak-Proof

Every time



Keep Power Up... Keep Oil Down... Give New Life ... and Last Longer — that's what McQuay-Norris Piston Rings will do. And they do it economically, too! Install only McQuay-Norris and get the performance that means money in your pocket.

Engine Deposits

Continued from Page 158

plans to study these phenomena must be resigned to spending most of his time in explaining why his data do not correlate.

The piston skirt area is prone to accumulate both varnishes and lacquers. We again make the distinction that varnishes are materials soluble in acetone, chloroform, or similar solvents, and lacquers are insoluble coatings. The change from one to another appears to depend primarily upon piston temperature. Many operators have considered the skirt deposits to be more unsightly than harmful. However, we have shown recently that they can increase the friction horsepower of an engine by more than 20 per cent in a relatively short time. In certain cases, the deposit buildup has been sufficient to freeze the pistons.

Sludging of the crankcase can be a serious problem in promoting oil starvation in the engine. This sludge can block oil passages to critical areas such as bearings and hydraulic valve lifters. The buildup of sludge may be due either to fuel components or to decomposition of the oil, in both cases lead salts may account for a large part of the deposits. The sludge collects harmlessly in quiescent areas of the lubricating system, but becomes serious when it plugs the oil screen or gets into the pressure lines. While most of the contents of the combustion products, a substantial amount of raw gasoline and precombustion reaction products appear in the crankcase. These products contribute to the buildup of dilution and proto-varnish in the crankcase.

With modern refining methods and improved inhibitors, the oxidation of modern motor oils in the crankcase has been greatly reduced even in high output gasoline and diesel engines. This has been helped by the development of both chemical and engine tests, for example the L-4 test. Most premium oils made to pass these tests will give very good service in automotive engines provided reasonable drain periods are observed. Therefore, much of the deposit in engines, operated under moderate conditions and with a good modern grade of oil, can be attributed primarily to the composition of the fuel.

The reason gasolines seem to contribute more to deposits at the present time can be traced both to improved oils and to the development of high octane fuels. Before the last war, the overall volatility of the gasolines was greater because the heavy ends which had a poor anti-knock quality were not much used. With the development of catalytic cracking processes and the increase in capacity of these units, high boiling distillates having high anti-knock quality are available. This has made it possible for the refiner to meet the demand of the automotive engineer for a fuel of uniform octane quality throughout the distillation range and at the same time for a fuel which is non-volatile enough to keep away from vapor lock trouble. Sometimes the heavy ends of the gasoline contain constituents which help to form varnishes.

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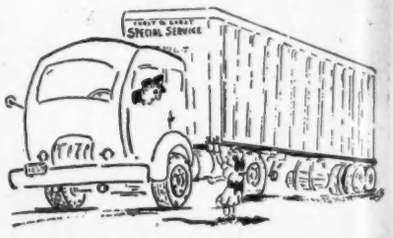


". . . and third house on the right. Say Kathy sent it."

Mileage between overhauls increased 35% with KOPPERS *K-Spun* porous chrome piston rings

The 205 vehicles of Broadway Maintenance Corporation, New York City, are equipped 100% with Koppers K-Spun Piston Rings. They operate under the most adverse conditions—stopping, starting, idling in every kind of weather—servicing street lights, neon signs, electric construction, etc. "K-Spun Rings," says the shop superintendent, "have increased mileage 35% between overhauls, reduced oil consumption 20%, cut cylinder wear substantially!"

Koppers K-Spun is an entirely different piston ring material, manufactured by a centrifugal casting process. K-Spun is twice as strong—4 times more resistant to combustion shock—much more wear resistant than ordinary ring materials. *Koppers K-Spun Rings are guaranteed against breakage in installation or in service!*

Koppers Porous Chrome* has proved to be the outstanding piston ring development of the century! The *porous surface* holds and distributes oil during break-in, quickly wears down to a perfect seat of long-wearing solid chrome! Koppers Porous Chrome Rings last up to 4 times longer than ordinary rings—reduce cylinder wear 50% or more! Koppers puts the chrome where it belongs—on the top compression ring—the ring that gets the *most* wear, the *most* heat, the *least* lubrication!

Cut down-time, lower operating costs, increase mileage and profits — specify Koppers K-Spun Porous Chrome Piston Rings next time you overhaul!

*Van der Horst Process.

See Your Koppers American Hammered Jobber for these extra long wearing Koppers Piston Rings—equally effective for re-ring or rebore jobs. KOPPERS COMPANY, INC., *Piston Ring Dept.*, Baltimore 3, Md.

AMERICAN HAMMERED KOPPERS *K-Spun* POROUS CHROME PISTON RINGS

Only Koppers can furnish K-Spun or Porous Chrome!

Engine Deposits

Continued from Page 160

In areas where for one reason or another sulfuric acid treatment of the fuel is practiced, the concentration of these reactive constituents is reduced, and dirty fuels are less of a problem. Of course, this involves a loss in yield and octane number.

Our laboratory has been actively interested in how these products from the gasoline get into the crankcase and cause malfunctioning of the engine. These studies have been concerned with the components of the fuel which contribute to the deposits and the interrelation of operating conditions and oil with these components in their combined effect.

Test Conclusions

BASED upon the data we have obtained, it is possible to set down a number of thoughts, many of which are confirmation of work by previous investigators; but others, we hope, are thought-provoking enough to stimulate additional work in this interesting field.

1. It has been confirmed that gasoline does contribute, and under some engine conditions, may be the chief cause of induction system, piston and crankcase deposits.

2. Intake valve burning is influenced by the use of certain gasolines. The nature of intake valve deposits and the degree of burning may be a function of gasoline type, as well as of operating conditions.

3. The character of combustion chamber deposits is far more important than their amount when considering the adverse effect on pre-ignition and octane requirement increase.

4. Tests have shown that the lubricating oil is probably the medium through which the deposit-causing agents from the fuel travel to form engine deposits. These deposits are probably not laid down on the piston as the blowby migrates from the combustion chamber to the crankcase.

5. Low jacket temperature is conducive to the formation of these deposits. Raising the jacket temperature appears to prevent their formation but does not reduce oil contamination. The oil contaminants will deposit out on any engine surface which is at the proper temperature. Thus, any engine which normally operates at a high enough jacket temperature to keep out of trouble may accumulate a considerable quantity of deposits during cold starts and warm-up periods. Piston deposits, once they are formed, cannot be removed by increasing the jacket temperature.

6. The addition of the correct type of detergent to the lubricating oil will reduce engine deposits originating from the fuel. The deposits studied in these experiments are of the type and amount which can be controlled by such detergents.

7. The effect produced by individual hydrocarbons on the formation of deposits has been studied. Complex diolefins and aromatic olefins as well as other special types of compounds appear to play a major role in the formation of these deposits. Simple paraffins and olefins do not seem to enter into deposit formation.

END

Please Resume Reading Page 59

★★★★★★★★★★★★★★★★★★★★★★★★★★

SLOWGAN

Traffic sign: "Our Safety Zone is Inside Your Head"

★★★★★★★★★★★★★★★★★★★★★★★★★★

SPECIAL FOR FLEET OWNERS

Amazing ENGINE-COMPARTMENT LIGHTING CABLE

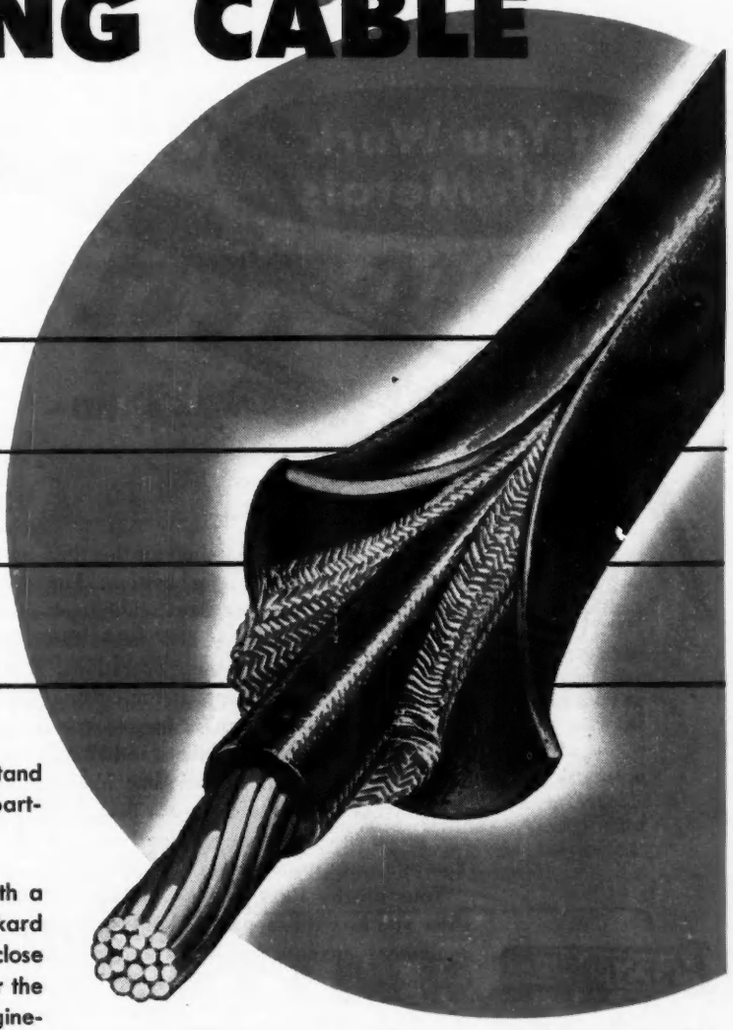
withstands the effects of

high heat

oil and gas vapors

cleaning compounds

and live steam



At last it's here—a lighting cable that will withstand the severe conditions that exist in the engine compartments of buses and in other tough locations.

It's a Packard cable, of course—a new cable with a glass braid between two walls of special Packard synthetic insulation—a new cable developed in close cooperation with eminent automotive engineers for the express purpose of successfully combating engine-compartment conditions that are too severe for other types of lighting cable.

In the interests of better performance and longer service from your vehicles, investigate this new Packard cable. You'll find it will lower maintenance costs by long outlasting any similar-purpose cable.

Packard
REG. U. S. PAT. OFF.
TRADE MARK

Packard Electric Division, General Motors Corporation
Warren, Ohio

FOREMOST BUILDER OF AUTOMOTIVE AND AVIATION WIRING

Washington Runaround

Continued from Page 37

called for a total of 30,000 units for the period.

Tax Fight Continues

Spokesmen for the motor vehicle industry and its related trade associations have continued a stubborn, though probable losing, fight against proposed federal boosts in gasoline and excise taxes. Typical of facts and figures laid before Congressional tax committees is the testimony of the American Trucking Association which showed that these levies already exceed the federal expenditures on highways by more than $1 billion.

The ATA has bitterly protested the discriminatory feature of the proposed new 2-cent tax on truck diesel fuel. The association contends that any diesel fuel tax should apply equally to railroad locomotives and industrial engines as well as to trucks.

In the meantime, government reports indicate that the federal tax take (state and local taxes not included in these figures) from motor vehicle owners during the past fiscal year amounted to approximately:

Gasoline, $569.1 million, up 8 per cent from 1950; excise tax on tires and tubes, $198.4 million, up 30 per cent; on lubricating oil, $87.2 million, up 13 per cent.

Excise taxes—on trucks and buses, $121.3 million, down nearly 2 per cent; on automobiles and motorcycles, $653.4 millions, up 44 per cent; and parts and accessories, $119.5 millions, up 26 per cent from 1950.

S.1889 No Threat at Present

Action on the hodge-podge bill which would virtually rewrite the Interstate Commerce Act (S.1889) is definitely out of the picture for this session of congress and probably much longer. Introduced at the request of a Washington attorney by Sen. Edwin S. Johnson, D-Colo., the bill has brought quick and largely unfavorable reaction, much of it from business and trade groups outside the transportation industries. Sen. Johnson himself apparently has little interest in the bill and has other less drastic proposals resulting from last year's Senate hearings up his sleeve. Nonetheless CCJ believes readers should know what the bill contains; presents salient highlights on page 192 of this issue.

(TURN TO PAGE 166, PLEASE)

New Diesel Installation

L. W. Jackson, Motor Maintenance Supervisor, Hercules Powder Company, Bessemer, Ala., climbs into the cab of one of the first L-190 International trucks to be powered by a 150-hp Model JBS-600 Cummins Diesel. The JBS-600 is the newest member of the Cummins automotive line

and has been designed primarily for medium-duty trucks, city and intercity bus applications. The engine is a six-cylinder, four-cycle, full Diesel, with a piston displacement of only 401 cu in. at a weight of 1745 lbs, and develops its horsepower at a speed of 2500 rpm. An insulated body will be installed on the truck by Hercules for the hauling of commercial dynamite

"Steps Up Schedule Speeds!"

Go modern-

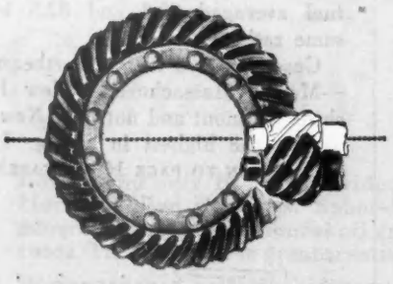
Go Hypoid!

—ON TIMKEN-DETROIT MEDIUM- AND HEAVY-DUTY AXLES

Today's business man needs—*and demands*—quick delivery of his essential goods and materials! He depends on *you* to do the job economically, dependably and on time! And—thanks to Timken-Detroit Axles with Hypoid Gearing—successful fleet operators are continually stepping up schedule speeds—increasing ton-miles and profits!

The simple, rugged construction of Hypoid Gearing keeps maintenance expense at a minimum—provides plenty of strength and power for long hauls! This modern design of heavy-duty axle gearing has been *proved* by billions of miles of trouble-free operation under all types of load and road conditions!

If you're in the market for new trucks, specify Timken-Detroit Axles and Brakes. You'll find Hypoid Gearing an important Timken-Detroit feature!



HYPOID

HEAVY-DUTY GEARING

The *offset* Hypoid pinion is bigger and stronger. Bearings are bigger. More teeth are in contact, reducing loading per unit of contact area. Torque-transmitting capacity is increased. Slower gear ratios are practical without loss of strength.

SEND FOR THIS INFORMATIVE ILLUSTRATED BOOKLET ON HYPOID GEARING TODAY! IT'S YOURS FOR THE ASKING!

TIMKEN Detroit AXLES

A PRODUCT OF THE TIMKEN-DETROIT AXLE COMPANY
DETROIT 32, MICHIGAN

The Accepted D A Standard

TRADE MARK REGISTERED

WORLD'S LARGEST MANUFACTURER OF AXLES FOR TRUCKS, BUSES AND TRAILERS
PLANTS AT: Detroit and Jackson, Mich. • Oshkosh, Wis. • Utica, N. Y.
Ashtabula, Kenton and Newark, Ohio • New Castle, Pa.

Washington Runaround

Continued from page 164

Site Choice Important in Building

Operators who plan to build new terminals, warehouses, garages, shops and other facilities stand a much better chance of government favors, including contracts, if they pick sites located from 10 to 20 miles away from cities. This, in effect, is a governmental policy as recently announced by the White House.

Specifically, the White House has instructed the agencies that in granting loans, fast write-off certificates, allocations of materials, and even in negotiating contracts, to pay particular attention to "satisfactory dispersion" of the company's facilities away from thickly populated industrial areas.

This new policy has been sharply criticized, in Congress and out. Some congressmen feel that the Administration is thus by executive action trying to ride rough-shod over the will of Congress. The White House had asked that such a provision be written into the extended Defense Production Act, but the proposal was voted down decisively.

Rate Uniformity

A new move toward setting up a nation-wide uniform freight rate and classifications was taken last month when decisions were handed down by the Interstate Commerce Commission. The extent to which motor carriers will be affected is not clear at present, but will be announced after further study.

With respect to the classifications: railroads have been ordered to make up and file within the next four months a uniform classification of manufactured goods with an eye to doing away with class rate differences for the same types of goods in different sections of the country.

In establishing such equality, it is estimated by the ICC that rail freight rates east of the Mississippi and north of the Ohio and Potomac rivers should remain as they are. Reductions ranging up to 15 per cent in some cases should be made for the remainder of the area east of the Rocky mountains. Such rate changes were not ordered but are seen by the ICC as representing a probable basis.

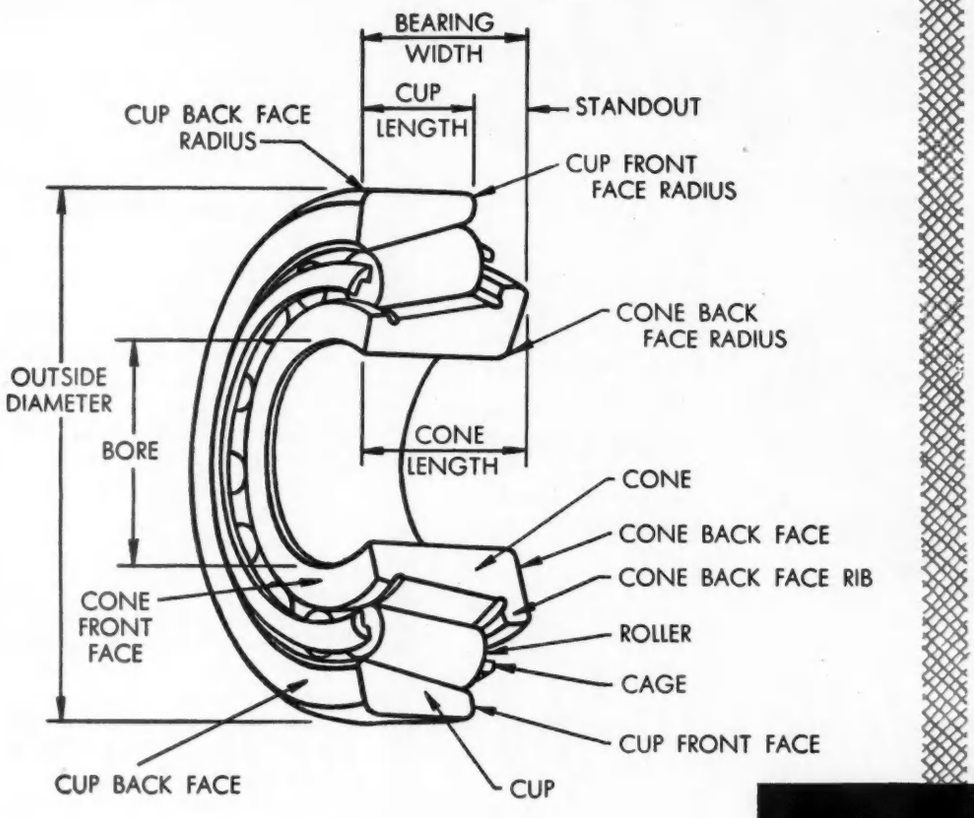
Octane Rating Levels Off

The upward trend in octane rating of gasoline during the postwar period is apparently leveling off. Regular price gasoline used throughout the United States last winter had an average rating of 83.3 by the research method, and 78.8 by the motor method, the latest combined report by the American Petroleum Institute and the Bureau of Mines shows. This is only a slight increase in the previous summer's ratings. Octane ratings of premium price fuel averaged 90.3 and 82.5 by the same rating methods.

Gasolines sold in the Northeast area —Maine, Massachusetts, New Hampshire, Vermont and northern New York —were the highest in rating. Lowest

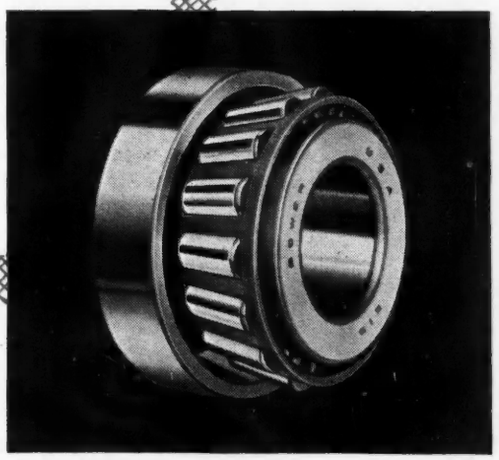
(TURN TO PAGE 168, PLEASE)

"Hey . . . know where I can pick up some aviation gas?"



BOWER

ROLLER BEARINGS



What Bower Quality means to you...

Bower, and *only* Bower, provides the protection of Spher-O-Honed Roller Bearings. Spher-O-Honed means spherically generated roll heads, liberal oil groove, and micro-inch-smooth races. These add up to greater satisfaction for the vehicle owner.

Bower *tapered* roller bearings cover almost every automotive replacement application. Bower *straight* roller bearings are available for popular numbers.

Famous Bower quality is backed by famous Federal-Mogul Service. Immediate availability through Federal-Mogul jobbers.

FEDERAL-MOGUL SERVICE • DETROIT 13, MICHIGAN

(Division of Federal-Mogul Corporation)

BEARING FEDERAL Mogul SERVICE

It's a Federal-Mogul Service!

Washington Runaround

Continued from Page 166

ratings shown by the survey were found in California, Oklahoma, Texas, New Mexico, Colorado, Kansas, Utah, Arizona, and Nevada.

Rate Increase Denied

The ICC has turned down the railroads' petition for a general 15 per cent permanent increase in freight rates and instead approved an upward hike in rates of 9 per cent for the eastern roads and a 6 per cent boost for other sections. The upward trend in freight traffic, the ICC said, should wipe out the difference between the permitted increase and what the rail carriers asked.

The new rates are not in addition to but include the 4 per cent boost for eastern roads and 2 per cent for others which were allowed as interim increases in April. Also, the ICC says, the new rates are not permanent but are effective only until Feb. 28, 1953, unless "sooner modified or terminated."

The railroads immediately expressed dissatisfaction with the decision. The increase would scarcely meet more than half of their increased costs, they complained. The Office of Price Stabilization was also displeased—but for a different reason. OPS predicted that the new rates would result in retail price increases throughout the industrial and business worlds.

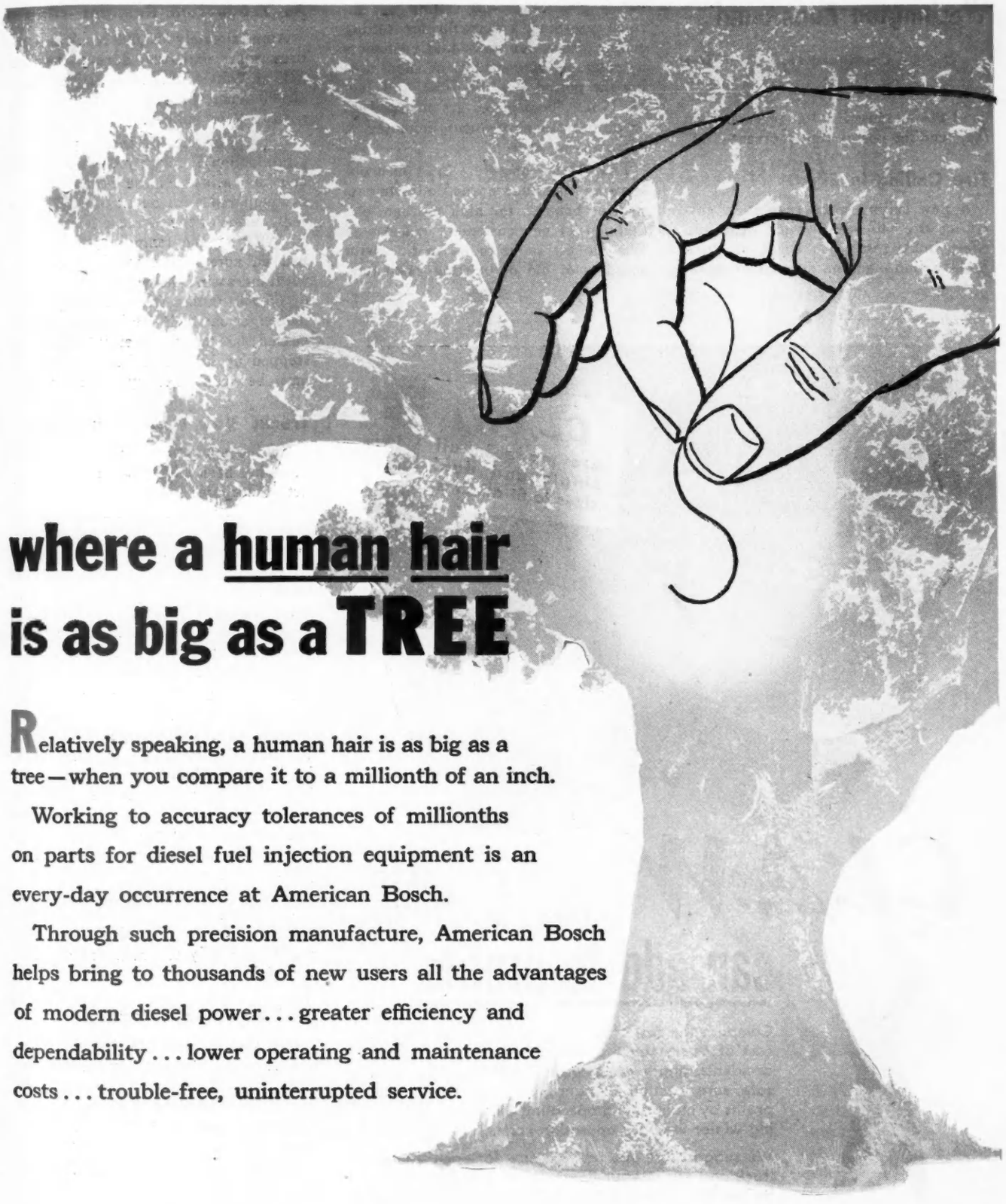
Mail Contracts Increase

Most of the bugs may shortly be worked out of the peddle run type of truck mail hauls, that is, carrying the mail as part of the general cargo on regularly scheduled runs. These differ from the major Star Route runs where contracts call for capacity cargo of mail.

Since last February, when the P. O. department began dropping railroad contracts in favor of truck hauls, more than 120 Star Route trucking contracts have been placed. These include the recent switch to motor carriers the transport of mail between about 120 offices in the St. Louis area and the temporary contracts for eight routes out of Cincinnati, including hauls between the city and Louisville, Indianapolis, and Chicago.

Meantime, Congress has been eying the Post Office appropriations bill with the view to cutting down on the budget. But the difficulty is that there is no good estimate of probable savings in face of expected boosts in carrier rates

(TURN TO PAGE 170, PLEASE)



where a human hair is as big as a TREE

Relatively speaking, a human hair is as big as a tree—when you compare it to a millionth of an inch.

Working to accuracy tolerances of millionths on parts for diesel fuel injection equipment is an every-day occurrence at American Bosch.

Through such precision manufacture, American Bosch helps bring to thousands of new users all the advantages of modern diesel power... greater efficiency and dependability... lower operating and maintenance costs... trouble-free, uninterrupted service.

AMERICAN BOSCH

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MAGNETOS • GENERATORS • VOLTAGE REGULATORS • IGNITION COILS
ELECTRIC WINDSHIELD WIPERS • DIESEL FUEL INJECTION EQUIPMENT

AMERICAN BOSCH CORPORATION • SPRINGFIELD 7, MASS.

Washington Runaround

Continued from Page 168

or of the increased postal revenue from the pending postal rate increases.

Tire Ceiling in Effect

A new ceiling price regulation governing tire mileages service went into effect in August. The Office of Price Stabilization made no attempt to establish a general overall ceiling but instead provided a formula for setting ceiling prices for individual customers by reference to contracts in effect during the period Dec. 19, 1950, and Jan. 25, 1951. These prices are adjusted up or down with subsequent increases or decreases in costs.

Tire service operators must also observe and continue normal adjustments such as bonuses for high mileage, etc. Ceilings for new customers or accounts must be set so as to be in line with accounts of old or existing customers.

As Production Remains High

Approximately 385,000 truck and bus tires were exported during the first half of 1950, a reduction of more than 10,000 from the same period in 1950, reports here indicate.

Reports by the tire industry indicate a production of roughly 8,425,000 truck and bus casings for the 6-month period as compared with about 6,870,000 last year. Some of the increase is attributed by NPA to the temporary spare tire ban on automobiles which is credited with increasing heavy tire production by 35,000 units a week. Lifting of the passenger car fifth tire ban was accompanied by the requirement that this stepped up output of heavy duty tires must be maintained by tire-makers.

Trucks Now Under Tax Plan

Rolling equipment for trucking purposes has been added to the broadening list of purposes for which certifications for fast tax write-offs have been approved. First such approval was recently granted Transamerican Freight Lines, Inc., of Detroit. Tax benefits were approved for purchase of more than $985,000 worth of equipment, about 80 per cent of the planned procurements by the firm. Several similar applications are pending.

A check on DPA as of Aug. 1 indicated that certifications for these tax benefits have been granted to at least 15 different trucking, most of which have been for building new or expanding old terminal facilities, in the amount of about $3,300,000. The same check reveals that the DPA has certified nearly $1 billion worth of transportation, terminal, and storage facilities out of 322 applications. This places the combined transportation and storage industries high on DPA's list, ranking second only to producers of basic materials.

Highway Steel Situation

Highway builders are worried at the prospects for highway construction for early 1952, their concern being based on the fourth quarter cutbacks in steel allocations for this purpose. This amounted to about 17 per cent.

Not only were highway steel allocations for state, county and city use cut back from an expected 300,000 tons to 250,000 tons, the American Association of State Highway Officials protest. But delay in announcing highway steel allotments will probably result in mills being so loaded as to accept road construction orders for even the amount finally allotted.

END

Please Resume Reading Page 41

AIR (the *only* complete line)

ACTOOLS

nut running jobs

5 AIR SIZES FOR ALL AUTOMOTIVE REPAIR WORK

These powerful, light-weight AIR tools offer the same outstanding performance advantages found in Ingersoll-Rand electric Impactools . . . the standard in the automotive service industry.

5 AIR sizes up to 1½" capacity

Ingersoll-Rand ORIGINATOR OF IMPACTOOLS—air and electric

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TAPPING . . . SCREW DRIVING . . . HOLE SAWING . . . STUD DRIVING . . . EXTRACTING BROKEN STUDS . . . WIRE BRUSHING . . . WOOD BORING . . . MASONRY DRILLING

Penn State Grooms Good Drivers

Continued from Page 80

tions as well as yard tests, psychophysical tests and indoctrination procedures. These functions in many instances are divided between the personnel department and driver-instructor depending on practices of the particular company.

Since the driver-instructor is primarily a teacher, special emphasis and training is given in methods of teaching. Instructional steps follow the training-within-industry program as developed at Penn State during World War II. Specific suggestions are given for planning the instruction and for measuring accomplishment.

Effective instruction requires effective communication. Both the spoken and written word must be direct, clear and easily understood to be forceful. Instruction and practical application on the part of all class members is required in both oral and written presentation. Use of visual aids, working models, and a step-by-step method for teaching driving are presented.

Attitudes are considered next. This subject requires careful thought. Numerous recent studies show that driver attitude is often a major factor in accident prevention. Methods used for improving attitudes, suggestions for retraining experienced drivers and practical reminiscences showing how attitudes directly affect operating efficiency are analyzed. Defensive driving taken as an active agressive measure for use of alert skilled drivers is emphasized as the safest and most intelligent approach. This doctrine deserves wide recognition and no one group in this country is in a better position to spread it abroad than the drivers of commercial fleets.

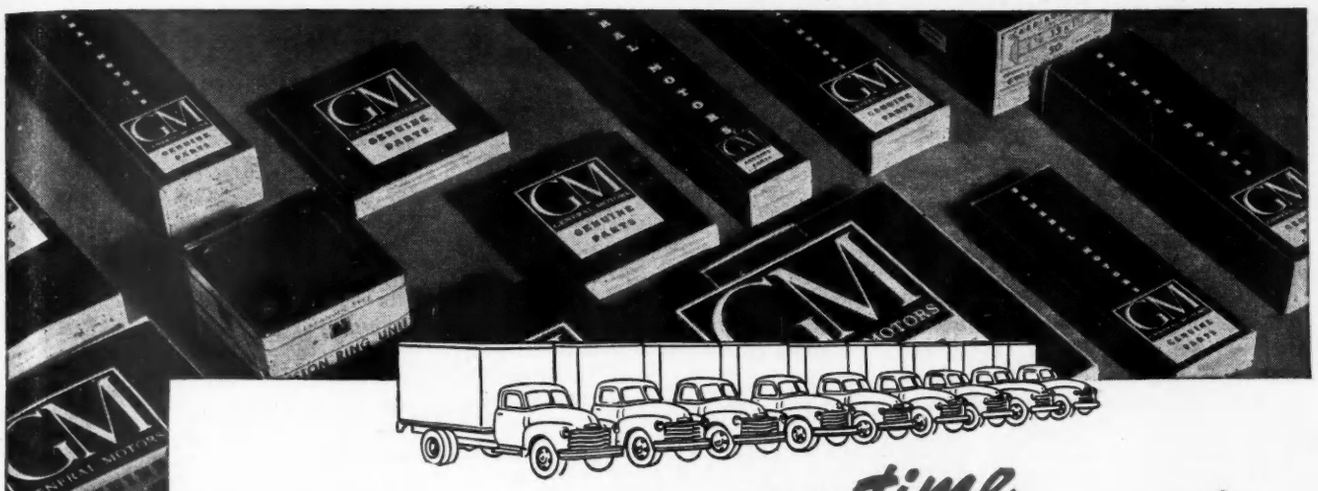
Human relations are emphasized. Driver paper work is reviewed and demonstrated. Methods of handling freight, Interstate Commerce Commission regulations, state and local laws and company rules are presented and discussed.

One full day is devoted to a study of accidents. This includes types and causes of accidents, reporting and investigation, and first aid with its importance and limitations. Stopping distances are shown through use of the detonator and a mock accident is staged for purposes of demonstration.

Conservation of equipment is imperative to the success of any business. Although the commercial driver has little to do with repair of the vehicle, he should understand the engine and how it operates. He should be informed on how quick starts, stops, hitting of obstructions, and inflation affect the wear of tires. He should realize whether the engine is operating smoothly by its sound, knowing from the feel of the tractor whether or not it is in proper shape. An understanding of use of in-

(TURN TO PAGE 176, PLEASE)

"Me figger tandem job give heap bigger payload."



You'll get more time on the job with

GENUINE CHEVROLET PARTS

One *sure* way to exercise a greater control over your cost of doing business is to lower maintenance and repair costs by using only *genuine* Chevrolet parts on your Chevrolet cars and trucks. Such parts are designed and precision-built of top quality materials especially for Chevrolet vehicles. The use of Chevrolet service procedure and genuine Chevrolet parts will materially lessen the down-time of your trucks . . . will give you a better cost-control factor.

RELY ON YOUR LOCAL CHEVROLET EXPERT...
YOUR LOCAL CHEVROLET DEALER

For Chevrolet parts—for up-to-the-minute Chevrolet service information—for actual Chevrolet service—rely on your Chevrolet dealer. He is in business to help you get more satisfactory and more profitable service from your Chevrolet equipment . . . call on him for help with your fleet service problems.

For Your Best Deal...
Deal with Your Chevrolet Dealer

CHEVROLET

Penn State Course

Continued from Page 174

struments on the panel board will assist him in an interpretation of the condition of the engine and all of these things will help him to make out accurate daily reports of vehicle condition.

A driver should be able to make minor adjustments in case of a breakdown on the road. When expert mechanical help is needed, he can make a much more satisfactory report to a garage so that the proper tools and equipment may be brought to the scene of the difficulty. All this the driver-instructor must know how to present in a way the men can understand and will accept in a cooperative spirit.

Practical fire prevention is a neglected subject. Therefore, classroom time is spent in discussing it and following up with outside demonstration work. Participation on the part of all students is encouraged.

Many companies that have sent representatives to the basic fleet course in the past are now using driver-instructors in their organizational set-up with excellent results. They find that their new drivers can be brought to a high standard of performance early in their association with the company. Uniformity of procedures standardized throughout the organization increases ease of supervision of all drivers and tends to develop justifiable pride and esprit de corps among employees throughout the organization. In such mutual regard and interest lie the seeds of constant improvement in the form of enthusiasm and suggestions from the workers themselves. A well-trained, well-integrated group of employees is any company's most valuable asset.

END

Please Resume Reading Page 82

374 Years of Safe Driving

The Annual Safety Dinner of Salesmen of the New England Bakery, Pawtuckett, R. I., was held in the recreation hall of the bakery. Mr. Vilbon C. Blais, superintendent of the New England Bakery fleet, was toastmaster.

James C. Cable, the bakery sales manager, discussed the importance of safe driving and praised the fine record of the men who have operated for many years without a vehicle accident. Mr. Cable pointed out that the saving of lives and the elimination of property damage are prime factors in the bakery safety program and that in addition, safe courteous driving by the salesmen creates customer good will for the company.

Mr. Martin L. Orner, vice president of A. E. Friedgen, Inc., Transportation Consulting Engineers of New York City, spoke on the National Safety Council's keystones to a good safety program, namely; Engineering, Enforcement, and Education, commonly known as the three "E's" of safety.

Safe driving pins were awarded by Mr. Andrew V. Ceselski, office manager and secretary of the safety committee, to 69 route salesmen who completed one or more years without a vehicle accident. In addition, five of the salesmen who have had outstanding records of safe driving were awarded gold wrist watches.

IT WASN'T THE STACKING
OR BACK-BREAKING HAUL
THAT FINALLY UNPEPPED YOU:
JUST THAT DISPATCHER'S
UNREASONING CALL
IN GROWLING, "WHAT KEPT YOU?"

Alvin J. Wolf

CAPT. EASY Says:

HERE'S A QUIZ FOR TRUCK AND BUS MAINTENANCE MEN

WHAT'S YOUR SCORE?

QUESTIONS

1. How many hose lines can you count on this engine?
2. Why do most fleet operators replace metal lines with hose?
3. Who furnishes a *complete line* of heavy-duty hose and reusable hose ends?
4. What's so different about Weatherhead hose and hose ends?
5. What "extra" saving do you get from Weatherhead?

Score 20% for each correct answer. For *all the answers* send for Weatherhead hose catalog No. J-1503. Address: The Weatherhead Co., Dept. T, 300 E. 131st St., Cleveland 8, Ohio.

ANSWERS

1. 17 show in photo.
2. To lick vibration—avoid breakdowns, road delays.
3. You guessed it!
4. Hose assemblies can be made up as needed. No big inventories of made-up assemblies. Simply keep hose in bulk, cut and attach with ends as needed . . . only ordinary bench tools required.
5. Rugged, all-steel Weatherhead hose ends are REUSABLE.

The EASY line to handle is..

The Mark of Quality

WEATHERHEAD

ON EVERY CAR!

Body Increases Payload

Continued from Page 71

Design Features

THIS design adapts itself well to any of a number of hi-tensile steel structural sections, and is particularly well adapted to square tubular steel structures.

The understructure may be of wood or steel, with the type of floor entirely dependent upon the type of commodity being hauled.

The curved panels are all standard prefabricated pieces, while for the flat panels, including the roof, either steel or aluminum may be used.

A double streamlined rub rail, which is a prefabricated item, is used at the bottom of the skirt for both appearance and, particularly, for heavy service in crowded metropolitan areas.

Also, for both service and appearance, a bank of multiple rub rails are used. These have the appearance of corrugations and tend to make the unit look longer and lower. At the same time they have considerable functional value because, being fabricated of hi-tensile steel they make excellent rubbing strips.

Painting and Lettering

ONE of the objects of this design, as previously set forth, was to create unity of appearance between a separate body and cab design and to have this advantage at much less cost than the integral body and cab types. This is most effectively accomplished by employing a two-toned color arrangement, where the predominating color is swept from the front bumper in a streamlined fashion through the top half of the cab and down the length of the body, above the belt line, ending in a streamlined manner near the rear of the body.

This color treatment also tends to give an illusion of length and tones down the height of the body.

Very simple modern lettering is suggested in keeping with a body of this design. For those who want something extra special, the belt moldings and the sweeping molding from the bottom of the peak back may be chrome plated.

END

Please Resume Reading Page 72

"Each of our Aluminum dump bodies hauls over 1,000 extra tons per year!"

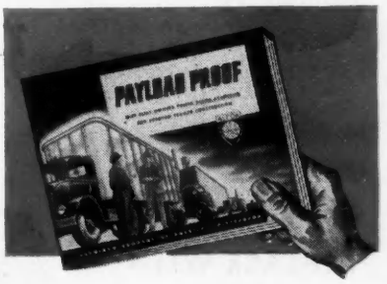
That's one way to figure added income when you lighten dead weight, step up payload capacity . . . with Alcoa Aluminum.

A. A. Rocco Trucking Corp., Cleveland, began using aluminum dump bodies on semitrailers in 1949. "Because of weight saved by aluminum," says L. P. Kelley, Rocco manager, "we can haul at least an extra ton of foundry sand every trip. Operating 24 hours a day, 5 days a week, within a 50-mile radius . . . it took only a few months to write off the higher initial cost of the aluminum bodies. Now those extra tons are all clear profit!

"Upkeep is practically nil," Kelley adds. "Our aluminum bodies resist abrasion, do not rust—don't even have to be painted. We expect them to last years longer than our heavier equipment."

Rocco's 16-cubic yard aluminum dump bodies and semitrailers were manufactured by Truck Engineering Corp., Cleveland, pioneer users of Alcoa Aluminum in custom-built highway equipment.

***EXTRA* PAYLOAD IS THE PAYOFF!**



SEND FOR FREE TRAILER BOOK

Military needs now limit the aluminum we can supply for civilian uses. But this 36-page "Payload Proof" book will give you valuable help in your long-range planning for more profitable equipment. Write ALUMINUM COMPANY OF AMERICA, 1876J Gulf Building, Pittsburgh 19, Pennsylvania.

ALCOA

ALCOA *First in Aluminum*

THE METAL THAT LASTS

Ventilation Control

Continued from Page 82

bush. All are approximately the same size, each containing some 140,000 square feet of floor area with storage facilities for 200 to 250 buses.

Since carbon monoxide gives no warning, it can strike before its victim is aware anything is wrong. Even when concentrations are so low that no physiological effects are distinguishable, carbon monoxide causes mental apathy and physical logginess resulting in worker inefficiency and susceptibility to accidents. The hazards of carbon monoxide can be overcome by continuous ventilation but usually this is an expensive method, especially in the winter when heating costs have to be considered. Therefore, a ventilation control system has proved to be the most economical and efficient way of safeguarding garage workmen against this hazard.

At the Flatbush and Ulmer Park garages, the heating and ventilating systems are integral. Supply and exhaust fans and steam heating coils are installed in two sheet metal equipment houses in the roof trusses of the garages with ductwork transporting fresh, and recirculated air. Since both these garages are essentially the same design, a description of one will suffice.

Air Supply Varies

THE GARAGE area is divided into five zones, each served by an independent heating-ventilating system. One zone is the fuel dispensing area, cut off from the rest of the building by fire walls and automatic fire doors. This area is supplied with 100 per cent fresh air continuously.

The other four zones are arranged to receive 10 to 15 per cent fresh makeup air at all times. Through a program clock control, the systems automatically change from partial recirculation to 100 per cent fresh air once ever hour for about 10 minutes. In addition, during peak traffic hours, these systems again operate on 100 per cent fresh air.

Carbon monoxide alarms, developed by the Mine Safety Appliances Co., Pittsburgh, Pa., continuously sample and test the atmosphere in return air ducts. If the concentration of carbon monoxide exceeds 2 parts in 10,000 (.02%), the system automatically switches to ventilating position. At these two garages, four air changes per hour are provided automatically, with the standby assurance that the alarms will start the ventilating cycle if any excessive concentrations of carbon monoxide are present.

How the System Works

AS A FURTHER safeguard, a manual pushbutton control for the fresh air supply is installed in Zone 1, (Fig. 3) the area where buses are repaired. If the men in this area feel they need additional fresh air, they merely push a button to get it. Exhaust fumes from the buses are removed from the area through flexible metal hose connections to tail pipes; (Fig. 1). Discharge of this exhaust is into an underground duct system.

Supply air, fresh or recirculated, is transported from the fan houses; (Fig. 4) through ducts led down the building columns. Discharge outlets of these ducts are about 1 ft. above the floor; (Fig. 5). Louver blades in the outlets are set to swirl the air as it leaves, creating high turbulence.

Supply fan motors in four zones are two-speed units arranged for operation at 1800 rpm, full capacity, or at 1200 rpm low speed. The exhaust fan motors are single speed, 1800 rpm units.

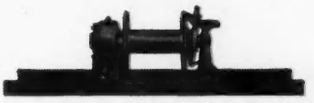
(TURN TO PAGE 182, PLEASE)

Braden Winches

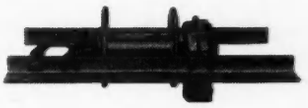
32 Standard Models from 6,000 lbs. to 100,000 lbs. Rated Capacity

BRADEN manufactures a complete line of truck winches. All types and models from a small 6,000 lb. winch for small pick-up trucks to a giant model rated 100,000 lbs. There is a BRADEN model for every handling job . . . moving, lumbering, construction, oil field work and hauling, as well as a complete line of winches for utility work. Be safe . . . be sure . . . specify BRADEN WINCHES for all handling jobs.

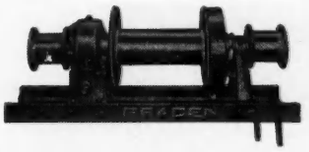
NOTICE: ALL BRADEN Models from the MU5 through MS50 have as standard equipment the famous OIL COOLED, FULLY ADJUSTABLE, AUTOMATIC SAFETY BRAKE.



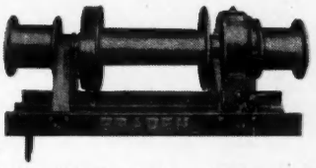
M3 SERIES Particularly well adapted for use on all light duty jobs handling loads up to 6,000 lbs.



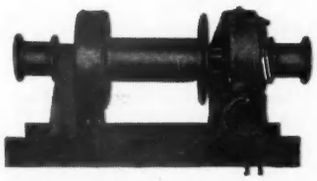
MU5 SERIES Larger underslung models than the MU3 winches. Have the OIL COOLED, FULLY ADJUSTABLE, AUTOMATIC SAFETY BRAKE. Rated Capacity: 10,000 lbs.



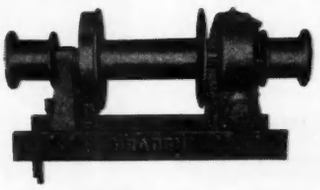
M6 SERIES Rugged models rated 12,000 lbs. Equipped with BRADEN's famous OIL COOLED, FULLY ADJUSTABLE, AUTOMATIC SAFETY BRAKE.



MS9 SERIES A dependable winch rated 20,000 lbs. The OIL COOLED, FULLY ADJUSTABLE, AUTOMATIC SAFETY BRAKE, standard equipment.



MS50-20B The greatest capacity Truck winch ever built on a production line. Rated capacity; 100,000 lbs. Gear ratio, 40 to 1.



MS18-18B Rated capacity 45,000 lbs. Full cab controls for drum clutch and cable drum band brake.

MS12-18B A safe, medium duty winch rated 30,000 lbs. For use with 1½ and 2 ton trucks. Gear ratio; 34:1.

BUY BRADEN — They are Safer

BRADEN WINCH COMPANY

Post Office Box 1709

BRADEN Winches — IN SERVICE AROUND THE WORLD

TULSA 1, Oklahoma

Ventilation Control

Continued from Page 180

In normal operation, the supply fans run at 2/3 speed, the exhaust fan is off, the main exhaust damper is closed, the recirculating air damper is open and the fresh air damper is closed. The exhaust and recirculation dampers are components of a two-position, multi-louvered mixing damper. When the CO alarm, the program timer or the manual switch call for air changes, the supply fan goes on full speed, the exhaust fan operates at full speed, the exhaust damper opens, the recirculation damper closes and the fresh air intake damper opens. The detecting instruments are located in the fan booths.

A master control and indicating panel for the entire ventilating system is located in the tool room of the bus garage which is under 24-hour observation; (Fig. 2). The panel has the following lights for each of the four zones: One lamp showing when the program timing device calls for full ventilating speed; two lamps indicating whether the alarms are calling for full speed or low speed, two lamps showing whether the supply fan is operating at low or high speed, and two lamps indicating whether the damper is in recirculating or ventilating position. There also is a manual control switch for each zone on this panel. A buzzer in the panel is arranged to sound for 20 seconds when the program timer or the alarm changes the supply fan motors from low to high speed. On the panel is an emergency stop switch for the entire system. Emergency stop switches also are located near each end of the garage for use in case of fire.

At the Flushing and Staten Island garages, the heating and ventilating systems are independent of each other. Truss-mounted unit heaters take care of the heating while individual roof fans handle the ventilating requirements. The roof fans are controlled automatically by the same type of alarms that are used in the other garages. In all, there are 27 alarms strategically located in each garage. Each alarm samples the atmosphere within a radius of 40 feet.

In all areas, except the inspection area which is occupied almost constantly, the alarm boxes are mounted on the walls 12 feet above the floor. In the inspection area, they are 4 ft. above the floor. Manual line starter switches for each fan are located in convenient places throughout the garage.

Exhaust duct intakes are located at floor level to suck air from the lower areas and exhaust it out the roof.

In a recent test, a diesel engine bus was parked 35 ft. from one of the alarms, its motor running. Within a few seconds, the alarm had picked up the exhaust fumes.

END

Please Resume Reading Page 84

"I told you not to follow that line!"

Summer driving calls for greater tire care

#7612 Cap

#7611 or 7613L Core

#880 Caps

#4000 Cores

#6060 All-purpose Service Gauge

#7188BH All-purpose Service Gauge

#8106B For Checking All Other Gauges

#8159B Chuck

#2030 Chuck Gauge

Truck Replacement Valves

When highways are hot enough to cook your goose—profit-wise, that's the time to double-check your fleet tire-air service. Keep your fleet operating at top efficiency on certified accurate air pressures protected by quality Schrader Caps and Cores... backed by the dependability and precision of Schrader Valves and Gauges, and inflating equipment.

Schrader Heat-Resisting Valve Caps (#7612) and Cores (#7611 or 7613L for extreme heat) are specially built to withstand the higher temperatures of summer driving. Schrader Truck Replacement Valves vulcanized the Schrader way—beat the heat every time. And highway buses, trucks should carry boxes of Schrader Valve Caps as spares—that pays dividends in reducing tire troubles.

Schrader Air Service Specialists know the answers to hot weather driving—and can show you how special Schrader Valve Cores, Caps and Gauges can help overcome tire problems of summer trucking. Check with your supplier, he has the information you'll want. *And . . . always specify Schrader Products.*

A. SCHRADER'S SON, BROOKLYN 17, N. Y.
Division of Scovill Manufacturing Company, Incorporated

Schrader
REG U S PAT OFF.

FIRST NAME IN TIRE VALVES

FOR ORIGINAL EQUIPMENT AND REPLACEMENT

Training Techniques Lower Accidents

Continued from Page 63

2. While there is no top limit on height, we will not accept men less than 5 ft. 7 in. for two reasons: A shorter man cannot handle the equipment properly; and the psychological disadvantage of a shorter man in dealing with the public.

3. The minimum allowable on an eye test is 20-25. While a driver may wear glasses on the job, testing is without them. We naturally check at the same time for color blindness.

4. Depth perception and hearing are tested at the time the Wasserman tests are given and complete physical conducted.

On the basis of expense to Seattle Transit Lines, a thorough physical must be passed before the expense of written examinations is undertaken.

IQ and Other Tests

THE 75 question Intelligence Quotient test is the one employed by the Civil Service Board. The minimum requirement for acceptance is the test's "normal" rating.

The second written examination is the 1943 Standard Examination for Transit Employees as prepared by the American Transit Association of New York City.

Particularly important to us are the results of the Personal Reaction Test for Transit Employees; 1943-46, distributed by ATA.

The final examination is with the Oral Testing Board, which is represented by three supervisors. One is a supervisor who normally handles operating discipline; one an assistant superintendent of operation; the third, a supervisor from one of the divisions. It is the function of the board to learn the man's personality balance (ability to get along well with people), adaptability, and reaction to discipline. The three men were chosen as representing major and minor discipline, plus the overall operating picture.

Passing grades on the examinations are pro-rated. If a man is graded 85 per cent on the written examination, but scores 65 per cent on the oral examination, he is rated 75 per cent for both.

Manpower shortage has necessitated certain leniency in acceptability standards. The same applies to certain physical standards. If a man is 2 in. short of our height requirement, but has good hearing, eyesight, and so on, he will be accepted.

Training on Group Basis

WITH each of these hurdles successfully taken, the expensive job of training, with supervisors as instructors, is begun. Training is naturally on a group basis, with applications held until a sufficient number is available. The number trained at one time depends largely upon our immediate requirements.

The first day of training three trainees are sent out on an empty bus with an instructor. A non-heavy traffic section is chosen with each of the three men given training on the operation of the bus. Each man then is checked to see how much he has absorbed.

This will dictate the amount of training necessary in making a capable driver of him. It avoids unnecessary

(TURN TO PAGE 186, PLEASE)

FINEST LUBRICATION FOR **ANY KIND** OF FLEET OPERATION

Do you have a lot of *stop-and-go* angles in your fleet operation? Maybe it's not dog chasing, but if you operate a fleet that's on a heavy "call-for-and-deliver" schedule, then you'll do well to consider Quaker State HD Oil. For here's the finest heavy-duty oil, we believe, produced anywhere in the world for short-haul or long-haul fleet operations.

The combination of the unparalleled qualities of 100% pure Pennsylvania grade crude oil, plus skillful refining and top-choice chemical detergents, can substantially lower your overall cost-per-mile.

Quaker State HD Oil keeps its body, protects fully, cushions every working surface and prevents the formation of sludge, gum and varnish. It actually cleans as it lubricates. Use it!

QUAKER STATE OIL REFINING CORPORATION, OIL CITY, PA.

Continued from Page 184

training and also gives the men the brief background essential in applying the theory as given.

Classroom Program

THE next four days are spent in classroom work, with two hours each day reserved for on-the-bus instruction.

Subjects covered through literature, lecture and training films are:

Indoctrination. This includes the policies and general setup of the plant. He is fully acquainted with the factors which will apply to him on the job; correct procedures and his responsibility.

Mechanical Construction of Equipment. It is believed that no man can recognize proper operation of buses and give it acceptable treatment without understanding something of the mechanical construction. Drawings and charts serve well in this respect.

Fare Structure and Transfers. Basic instruction, supplemented with booklets which the men may keep and study, in the procedures in collecting fares and granting transfers is given.

Public Relations. In creating and building good will with the public, it is believed that each driver must thoroughly understand his functions, responsibilities, and the diplomacy which occasionally must be displayed. Suggested methods of handling difficult situations are an important phase.

Accident Prevention and Accident Report. One man specifically trained in safety instructs the men in the common faults which result in accidents; the procedure to be followed when an accident occurs. This is supplemented with literature for home study and reference when necessary.

Route and Schedule Information. This is part of on-the-job training, with each man schooled on two routes during his apprenticeship period. Actual maps, outlining routes and schedules, are in the possession of each driver irrespective of length of service.

Two-Day Route Test

THE classroom work, with the two hours a day spent in the bus, now is complete. Each trainee is sent out with an experienced driver for a two-day period. The supervisor on the route is instructed to ride with the driver and trainee, and make notations regarding progress on the student check sheet.

The trainee actually is driving during the period when the supervisor is aboard. He is graded for a possible 180 points on the following: Steering a proper lane, hitting curb (together rated 20 points); clutch; shifting, gear selection, reducing (15 points for the three); starting (15 points); stopping (15); clearance (10); spacing (20); speed (15); signals (08); mirrors (02); judgment (25); attitude (10); appearance (10).

The supervisor talks with the trainee regarding his weak points following each day's grading.

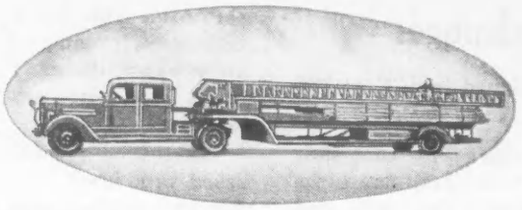
The trainee is then sent out with another experienced driver for a two-day period. Our experience has proved that if the entire apprenticeship is served under one driver, the man will absorb his strong and weak points. The shifting process enables a developing weakness to be eliminated before the habit is firmly established.

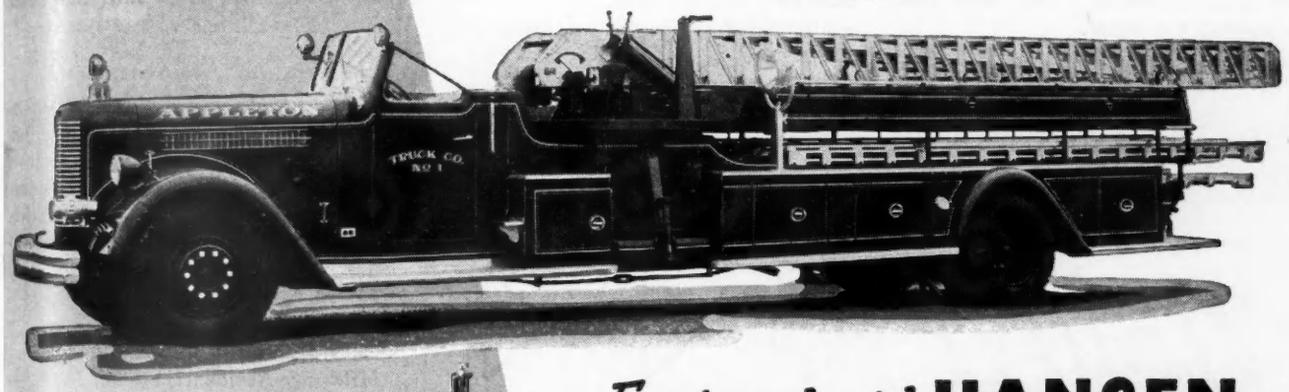
This procedure is followed until the trainee is deemed ready for a regular route. The usual period consumed for entire training is two to three weeks. His original route is not a heavy one; and one in which he has serviced as a trainee.

During the first weeks and months

(TURN TO PAGE 188, PLEASE)

PIRSCH





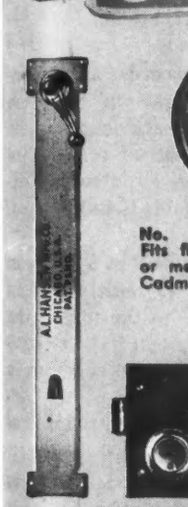
Equipped with HANSEN- *– the Hardware for Hard Wear*

INSTANTLY READY—at any hour—these fire- and rescue-squad units were built by Peter Pirsch & Sons, Kenosha, Wis. All equipped with Hansen Hardware—including cab windows, cab doors and body compartments.

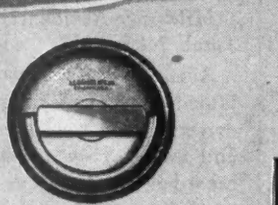
Cab Windows are fitted with Hansen straight-lift window regulators. No jamming or sticking. Fast, easy lifting, regulators are lead-coated, rust-proof. Locks used on cab windows are No. 60, one-piece, extension type.

Compartment Doors, holding emergency equipment inside for instant use, are equipped with Hansen flush handles. These fit flush with door and provide more usable space. Locks hold doors in tight, rattle-proof position.

Units and hardware used are illustrated. Speed — convenience — compactness — dependability — durability — are combined in these Pirsch-built, Hansen-equipped fire-fighting, life-saving speedsters.



Above, at left—No. 8"—Hansen straight-lift regulator. Enclosed. Lead-coated. Rust-proof. Fast. Efficient.

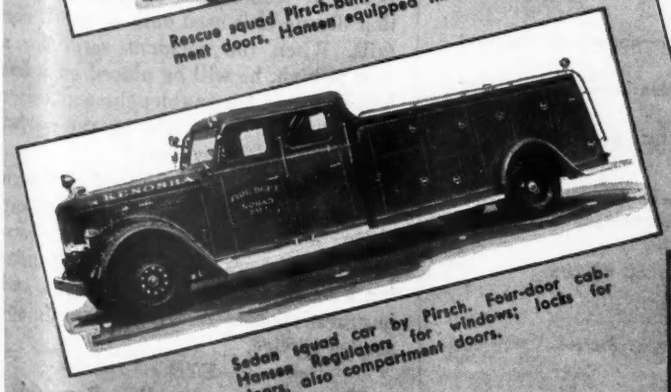


No. 79-S Flush Handle. Fits flush with door. Wood or metal doors. Rust-proof. Cadmium or chromium.

No. 60 Extension Lock. One-piece. Size 5" x 10". Wt. 2⅝ lbs.

No. 105 Lock. Suitable doors 5½' high. Strong. Compact. Wt. 3 lbs., 2 ozs.

Rescue squad Pirsch-built body. Nineteen compartment doors. Hansen equipped thruout.



Sedan squad car by Pirsch. Four-door cab. Hansen Regulators for windows; locks for doors, also compartment doors.

ASK FOR CATALOG

Emergency sedan with 4-door cab. Hansen Locks and Regulators. Compartment doors, side and rear—all use Hansen Handles and Locks.

HANSEN HARDWARE for Commercial Bodies

A. L. HANSEN MFG. CO.

5047 RAVENSWOOD AVE.
CHICAGO 40, ILL.

Continued from Page 186

on a bus in full charge, the supervisor spends as many hours each day as he deems advisable in riding with and counseling the driver.

Cost Is $500 per Man

A FULL-FLEDGED driver has now been obtained with the exception of periodic, short term, follow-ups. The actual cost to us is just under $500 per man. This includes the cost of instructors, training films, charts, bus maintenance during the hours when empty buses are used, and trainee's salary.

The cost of pre-training was established with funds allocated to train a sufficient number each year to make replacements. The original budgetary allowance was on the basis of the previous year's requirements, but is variable to include natural year-by-year fluctuations.

Each man undergoing his training is placed on buses. At the end of the first six-months' period, if the men show an aptitude and desire for trolley coach training, they are returned to the classroom for supplementary training. The additional training costs are modest; comparable to those for creating supervisors from the ranks. The men naturally remain on buses until the need for trolley coach operators arises.

Effect on Accident Rate

WE BELIEVE the proof of the effectiveness of our driver training lies in our safety record, which is above the average nationally. Mr. C. L. Hammons, our safety director, backs this claim with the following 1950 statistics:

Traffic Accidents: 1894.

Total Accidents: 2956.

Miles Operated: 22,125,166.

Miles per Accident: Traffic, 11,682—Total, 7485.

Accurate safety records are maintained with a card set up for each driver. His record of accidents, traffic and total for each year of service are recorded. Card records stipulate the extent of the accident, fault if established, and cost to us.

Following one accident in a year, in which the driver is at fault, a green metal tab is attached to the top of the card in the notch indicating the accident number. With a second accident in the same year, a blue tab also is attached. Over this number a red metal tab also is attached.

Whether or not a driver is called in for consultation following an accident depends entirely upon the circumstances. Non-belligerent discussion with the man usually produces the reason for the accident.

A personal problem, which understanding and counsel may correct, often is the cause for the preoccupation which resulted in an excellent driver having an accident.

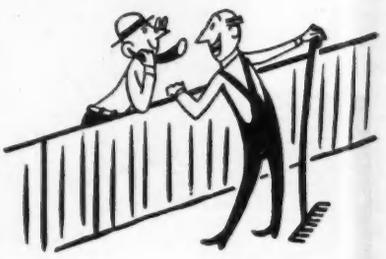
Suspensions and fines are employed only as a last resort. Generally, before such a step is taken, we will recall a man for additional training. The expense of training is sufficiently great that dismissal is used only when all else fails. When the accident ratio for a man is high, he will be placed on a less heavy run, which enables the supervisor to work closely with him for the period of time deemed necessary.

Our experience has proved thorough driver training to result in economy through decreased maintenance costs, develop able personnel while maintaining a moderate cost per mile ratio, and improved public relations through upgraded service.

END

Please Resume Reading Page 64

LOCAL NEWS



Syracuse, N. Y.—The Onondaga-Oswego-Courtland County chapters of the New York State Motor Truck Assn. held their first annual dinner meeting recently with an attendance of 600.

Norwalk, Ohio—Norwalk Truck Line has a new general counsel, J. Otis Ford. Mr. Ford was formerly associated with Commercial Motor Freight, Columbus and LeCrone and Benedict Trucking Co. also of Columbus.

Indianapolis, Ind.—The Indiana Toll Bridge Commission has announced that construction of a toll bridge across the Wabash River, connecting Indiana and Illinois, has been scheduled to start early in the fall.

St. Paul, Minn.—Minnesota Motor Transport Assn. has named James Nagle, a driver for Minnesota-Wisconsin Truck Line, as their "driver of the month" for his action in giving first aid at the scene of a highway accident near Hershey, Wis.

Vancouver, B. C.—Bloedel, Stewart & Welch, Ltd., a pioneer logging firm, has spent $1 million on 37 Mack diesel units for transportation of 80 million board feet of logs in the conversion of 80 miles of railway to a road from Menzies Bay to Camp 5.

Philadelphia, Pa.—International Harvester Co. has a new branch office at 4500 Woodland Ave. which has complete facilities for service, parts, and accessories.

Albany, N. Y.—Vehicle registrations for the state of New York reached 3,640,820 during the first five months of 1951.

Los Angeles, Calif.—Turco Products, Inc., has been selected as the manufacturer of Dy-Check, a dye penetrant inspection method.

Cincinnati, Ohio—Independent Pneumatic Tool Co. (power tools) has transferred its Cincinnati branch to a new building at 3726 Floral Ave., managed by H. C. Brown.

Route 40, Maryland—State Police have asked the cooperation of the trucking industry in the observance of the 30 mph zones on Route 40 at the Edgewood intersection and Chesaco Ave. intersection. Speeds in excess of 50 mph by trucks have been recorded in this section which is classified as an accident hazard area.

RECONDITION YOUR ENGINE

FOR MAXIMUM **POWER**

FOR **LOWEST** OPERATING COST

REPLACE WITH ZOLLNER

THE "ENGINEER APPROVED" PISTON

Expertly engineered pistons make a big difference in engine performance — and operating cost. That's why it's always best to insist on Zollner "Engineer Approved" Pistons when reconditioning your engines. The big majority of engine manufacturers work hand-in-hand with Zollner engineers in the development of pistons best suited to heavy-duty use. Over 70% of all makes of trucks and buses are Zollner equipped — and have been for years. Only when you use Zollners can you be sure that your pistons are expertly designed and precision-made to the individual engine specification for utmost performance and economy of operation.

Used and Recommended by over 70% of all Truck and Bus Manufacturers.

ZOLLNER

HEAVY DUTY PISTON EQUIPMENT

ZOLLNER MACHINE WORKS **FORT WAYNE, INDIANA**

Senate Bill Has Tough Provisions But Little Chance for Approval

The new bill officially entitled "S.1889: To Amend the ICC Act" recently introduced by Senator Edwin C. Johnson, D-Colo. would have drastic and far reaching effects on motor transportation, with particular tough penalties applying to private carriers. In effect, recent supreme court decisions involving Lenoir, Schenley and other similar cases would be set aside. Fortunately the bill has little hope of getting beyond the Senate Interstate and Foreign Commerce Committees (of which Sen. Johnson is chairman). For one thing the committee will have no time for hearings before next winter. For another, reaction has been quick and violent (see page 164). But *should* it become law, here is what the industry would face:

1. The U. S. Transportation Tax on *all* motor carriers would be five per cent.

2. The present three per cent transportation tax for railroads would be continued.

3. ICC would be authorized to establish standards of federal regulations on truck *sizes and weights.*

4. For-hire carriers would be required to prove need for equipment purchase, or lease for at least six months; ability to pay rentals or other obligations; and that resulting transportation will not prejudice or discriminate against any other carrier or shipper.

5. Carriers applying for extension of ICC authority would be required to publish notice of application for three consecutive weeks in a newspaper in *each* country traversed by the extension.

6. ICC could revoke operating authority under simplified procedure.

7. *Any* agreements between carriers must be filed with ICC.

8. ICC may require through routes and joint rates, prescribe division of rates, terms and conditions for operating through routes.

9. Many finance provisions of the Interstate Commerce Act applying only to rail carriers now would be extended to motor carriers.

10. ICC would prescribe classes of property for which depreciation charges may be included in operating expenses, and depreciation rates.

Private carriers, specifically, would face these provisions:

1. Payment of five per cent transportation tax on shipments hauled in their own vehicles.

2. If no charge is made for transportation the five per cent tax will be based on actual common carrier rates or tariffs.

3. If no such rates or tariffs exist the tax will be computed "on the basis of a reasonable charge for such transportation as determined by the Commissioner of Internal Revenue."

4. The present right of private carriers to charge for transportation of their own products, as upheld by the U. S. Supreme Court in the Lenoir-Schenley case (Penntrux March 15, Page 18,083) would be nullified. A charge for transportation would place them under the "common carrier" defi-

(TURN TO PAGE 208, PLEASE)

New Britain
FLEX HANDLE
A HANDFUL OF JOB-POWER FOR EVERY MECHANIC!

When you get your hands on a New Britain Flex Handle you'll know why they're Tops in Tools! Their solid feel tells you here's a Tool built for rugged, fast action, and lots of it! It's perfectly balanced, slim and long reaching to get in those tough spots!

Feel that hand-hugging grip . . . prevents slipping and fumbling when you put extra pressure on tough nuts. Run your eye down the gleaming shank of finest alloy steel, expertly forged and heat treated for tremendous pulling power, triple plate, chrome finished for long rust-free life. See the five position adapter? It's designed to work at all angles, gets you into tight places, around obstacles!

Here's brute power that handles like a baby . . . team it up with famous New Britain Sockets, Cross Bars, Universals and Extensions to turn out fine work the fast, easy New Britain way. Call your NAPA Jobber, he'll gladly show you the great New Britain Line. The New Britain Machine Co., New Britain, Conn.

SOCKETS
¼", ⅜", ½", ¾"
DRIVES

UNIVERSAL JOINTS
⅜", ½", ¾"
DRIVES

CONNECTING ROD SOCKETS
½" DRIVE

EXTENSIONS
¼", ⅜", ½", ¾"
DRIVES

RATCHETS
¼", ⅜", ½", ¾"
DRIVES

FLEX HANDLES
¼", ⅜", ½", ¾"
DRIVES

NAPA Assurance of Quality

New Britain
GREATER STRENGTH • BETTER FIT **HAND TOOLS**

Shop Cuts Cost

Continued from Page 54

Overhaul Shop

NEXT is the large eight-stall section devoted to major overhaul (Fig. 3). Here, again, portability of equipment is the major theme. When an engine is to be overhauled such accessories as fans, air cleaners, radiator shrouds, radiator tubing, fuel lines, etc., are grouped on the portable carts shown in foreground. These are identified by truck number, cleaned, kept intact and returned to the proper section when the vehicle is refitted.

Meanwhile, the engine has been hoisted out by an electric crane on the monorail and rolled to the washrack at the extreme right of the garage. Here, it is completely disassembled with all small parts grouped on similar carts. A view of this department (Fig. 4) shows a cylinder block about to be hoisted into the cleaning tank, a wire cage full of small parts ready for similar treatment, and an oil filter being steam cleaned in the foreground. Truck in background has been stripped of engine and transmission, and is in for steam cleaning job.

Other units such as transmissions, rear ends are similarly disassembled in the steam room, then transmitted via carts or the monorail to the engine rebuild shop. Principal advantage of this system, now followed by many fleets is that the dirt and grime goes down the drain—not out on the floor of the rebuild shop.

Engine Rebuild

OUR next port of call was the engine rebuild room itself (Fig. 5). Kept immaculately clean, it houses a battery of adjustable engine stands that can handle the largest diesel units, a parts rack for major units in process and several steel workbenches. A lapping block is included (right wall) for lapping finished accessories such as pump housing to the block when necessary. But all major machine shop operations are done in the machine shop proper (see below).

Most intriguing feature of the rebuild room is the separate paint booth, complete with explosion-proof fixtures and exhaust fans, for repainting rebuilt engines. Much smaller than a vehicle paint booth, it has proved a most handy feature as a part of the rebuild room. Next to it is a booth for electrical repairs, and in the extreme left corner is the "pump room," air-tight and fan-ventilated for maximum cleanliness in handling diesel injectors and pumps. On the left wall is an air equipment overhaul bench with complete testing equipment.

Machine Shop

THE machine shop proper (Fig. 6) houses one of the fleet's pride and joy—a 26-in. swing lathe—big enough to take a complete rear axle housing. This permits resurfacing of built-up axle tubes without removal from the housing. Also included are brake relining equipment, a 20-ton hydraulic press, brake drum grinder, two smaller lathes, a large drill press and a cylinder head resurfacer.

The parts department, or store room, is unusually large; has windows giving direct service to both the main overhaul section and the engine rebuild shop. Special provisions at the rear promote exceptionally good facilities for the shipping and receiving departments, both used extensively for interchange of parts to outlying shops on the Garrett system.

(TURN TO PAGE 196, PLEASE)

STOP this damage to your fleet with "UNDERSEAL" rubberized coating!

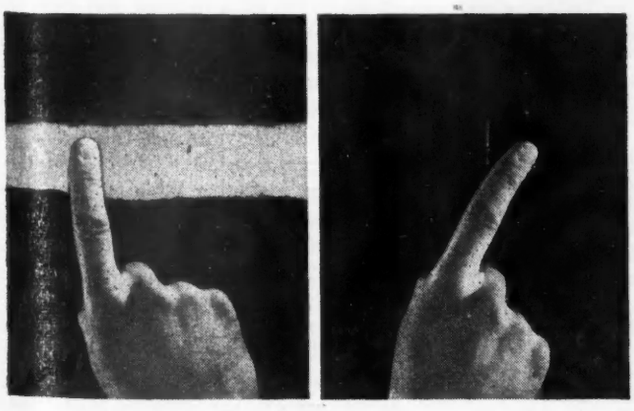
Reg. U. S. Pat. Off.
BRAND

RUST AND CORROSION are *profit-thieves* in any fleet maintenance program! Fenders, underbody, frame and the trailer body are all vulnerable—all can cause maintenance tie-ups through lack of adequate protection with "UNDERSEAL".

You can lick these twin menaces by applying a coating of "UNDERSEAL" to each new unit—or to your older units when they are in for servicing. "UNDERSEAL" is easy to apply. It sprays right on in a thick, tough resilient hide that gives complete protection against rust, corrosion and flying stones and gravel.

And when you protect with "UNDERSEAL", you can be confident that you've given your fleet the very best safeguard—the longest-lasting undercoating that money can buy. "UNDERSEAL" is *rubberized!* It's *naturally* tougher; *naturally* more resilient than undercoatings made with thin, brittle materials that chip or flake off when exposed to extreme temperatures or rough usage.

For longer road-life and lower maintenance costs, start your "UNDERSEAL" program now!



ONLY "UNDERSEAL" PROTECTS like this! After thirty passes with a sand-blast gun, the thick *rubberized* hide is still on the job. Substitute chipped and wore away after nine passes. RUBBER makes the difference!

FOR COMPLETE INFORMATION on how you can cut operating costs with "UNDERSEAL", ask your 3M representative. If you prefer, write directly to Minnesota Mining & Mfg. Co., St. Paul 6, Minn.

Made in U.S.A. by MINNESOTA MINING & MFG. CO., St. Paul 6, Minn., also makers of "Scotch" Brand Pressure-sensitive Tapes, "Scotch" Sound Recording Tape, "Scotchlite" Reflective Sheeting, "Safety-Walk" Non-slip Surfacing, "3M" Abrasives, "3M" Adhesives. General Export: Minn. Mining & Mfg. Co., International Division, 270 Park Avenue, New York 17, N. Y. In Canada: Minnesota Mining & Mfg. of Canada, Ltd., London, Canada.

Shop Cuts Cost

Continued from Page 194

Trailer Service

TRAILER service at Garrett comes in two parts. Major repairs are handled in the overhaul shop which has, among other equipment, huge I-beams implanted in the floor for use in straightening trailer and truck frames. But all routine service, despite the Idaho winters, is handled in the yard through the medium of a standard Buda Chore Boy —the portable self-powered unit which has its own gasoline, air-cooled motor, air compressor and complete lubricating equipment. In this way trailers, too, can be serviced on the spot wherever they may be parked.

Service Records

OUR story would not be complete without brief mention of how these extraordinary shop facilities fit into the overall Garrett maintenance plan.

While shop orders for bookkeeping purposes are made out for every shop job, the complete vehicle maintenance record is kept with the vehicle in the form of a well-printed bound book called the "Service and Repair Records." It is of standard 8½ x 11-in. size and contains more than 50 pages, most of them blank, special-purpose forms. It is the responsibility of both the shop foreman and the driver to see that the record is "abroad" each unit.

First few pages of the Record are devoted to general instructions of primary benefit to shop foreman at both the main shop and at outlying points. These instructions first outline 21 steps, including basic lubrication and inspections, at 750 to 1000 miles—an average one-way trip for most company units. Additional details are furnished concerning oil and filter changes (at 2000 to 4000 miles, depending on type of filter); steering gear lube (once a month) diesel nozzles (eight months); cylinder heads (eight months maximum); generators and regulators (as needed but must be installed in matched pairs); valves and injectors (once a month); radiators, brakes, etc.

It should be noted that on these inspections a time interval rather than a mileage interval is possible because of the extremely close relationship of average miles traveled. It amounts to about 15,000 miles a month. Most of these major parts carry a dated tag showing when work was last performed.

The next several pages consist of pink blank forms, devoted to a mileage record, showing trip miles, accumulated miles, stations, etc.

Following these are a series of yellow forms showing work done on various inspections.

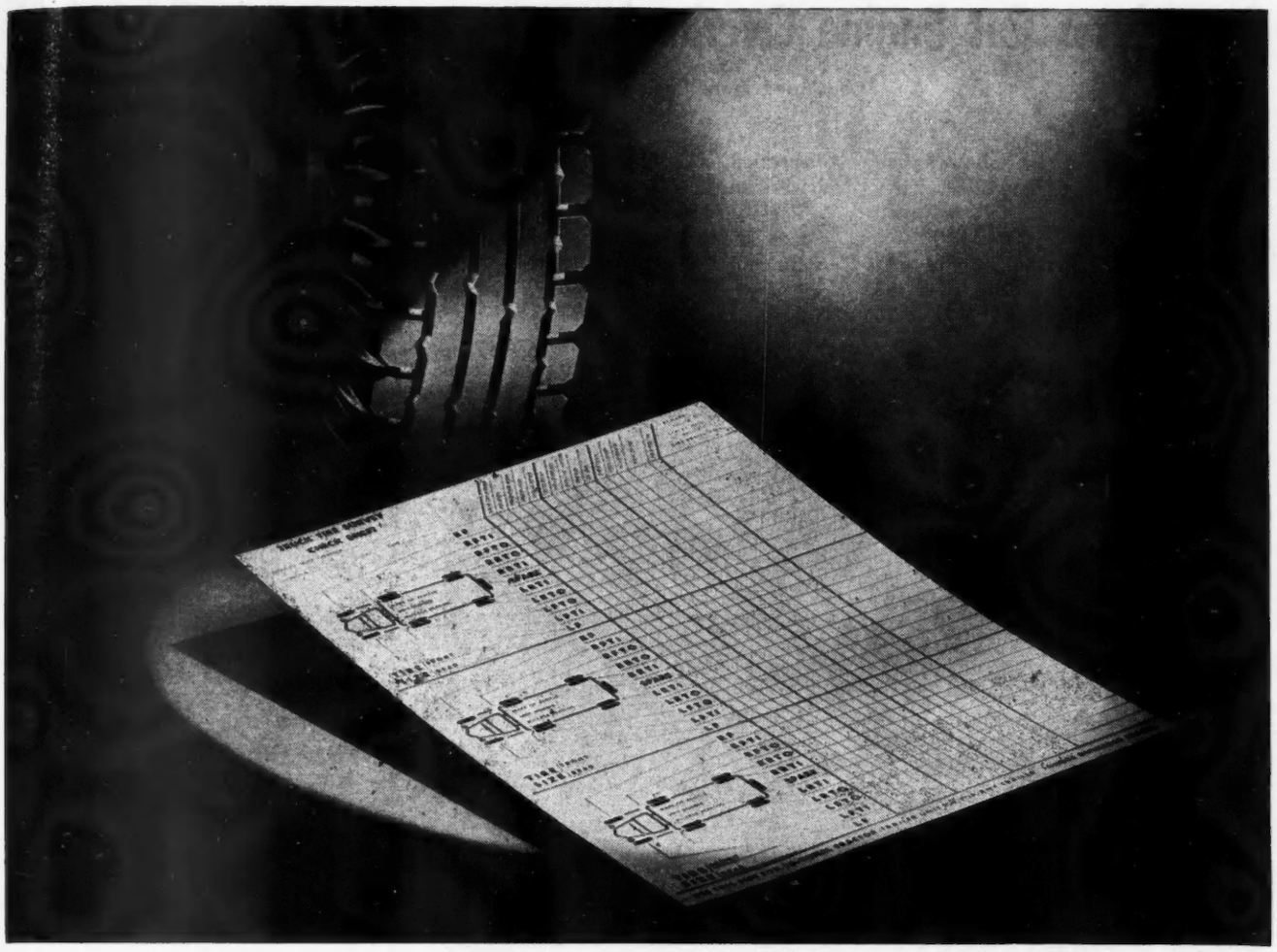
The next series on blue paper give details of all work done on major units including transmissions, rear ends, front axle, brakes, drive lines, wheel, bearings and body repairs. The reverse side of all forms provide space for remarks.

The final group of forms, on buff paper, provide a complete record of engine service, including pistons, sleeves, heads, valves, injectors, and all accessories. It does not, however, include a major rebuild. Records of this operation, including all over or undersized installations, etc., are maintained in the engine rebuild shop at Pocatello.

The "Service and Repair Record," plus driver reports on road performance, form the complete basis for scheduling all operations in the company's shop facilities. Both the record and driver reports are checked each time a road vehicle enters any terminal, and must be cleared by the shop foreman before the vehicle leaves.

END

Please Resume Reading Page 55



On goes the Royal Searchlight!

Down go your costs!

1. You Get the Answers to your TRUE costs! Your U. S. Royal Distributor has a new, valuable service for your fleet. He turns on the *SEARCHLIGHT!* (Fleet operators have found it so valuable they call it the ROYAL searchlight.)

• He studies the tires on every piece of equipment you own. He renders you a clear, written report with specific recommendations for controlling your tire costs. • You get a final cost record system you can depend on.

2. You Discover How Large Your Savings Can Be! You save money in costs per mile. You get more safety and efficiency. You put your tire problems in the hands of experts. You get a scientific and exact check-sheet on every vehicle.

3. You Plug Up the Leaks in your Profits! Your original tire investment is protected from here on! You get *ALL* the mileage built into your tires. *You actually control your tire costs every mile!*

HERE'S WHAT COMES TO LIGHT!

- ★ Bad wheel alignment
- ★ Irregular tire wear
- ★ Incorrect inflation levels
- ★ Defective valves
- ★ Improperly matched duals
- ★ Need for brake adjustment
- ★ Rim cuts and bruises
- ★ Needs for repair or recap
- ★ Needs for replacements (the right tire for the job—type, size and capacity)

All these profit leaks will show up on the report when your U. S. Royal Dealer turns on the Searchlight!

***A phone call does it*—to your nearest U.S. Royal Dealer (He's listed in the Classified Telephone Directory)**

U.S. ROYAL FLEET SERVICE

U.S. ROYAL TIRES

Procedures Cut Engine Overhauls

Continued from Page 66

tude Scale"; a road test follows; then a medical-physical examination.

Driver's 8-Point Inspection

WE HAVE assumed that the first essential in a good driver is the habit of keeping his truck always in safe operating condition. As a result, we recently perfected an eight-point truck inspection schedule. It applies to all drivers and is carried out twice a day.

The inspection most emphasized comes at night—after the driver has completed his scheduled day's deliveries and returned his truck to the central garage. The driver is made thoroughly familiar with the inspection routine which is listed on a mimeograph sheet described as "Daily Truck Maintenance—Driver's Safety Inspection." Instructions on the sheet clearly state, "The driver is responsible to check the following, and report the same if defective." The list includes:

"1. Tires . . . See if they are adequately inflated, without any bulges, blisters, cuts, or other indications of weakness.

"2. Gas, oil, and water . . . Check gas, oil and water for proper level required.

"3. Oil or Gas Leaks . . . Look for wet spots under truck that may indicate a leak in the oil or fuel system.

"4. Windows and Rear View Mirrors . . . Clean windows and rear view mirrors.

"5. Instrument Panel . . . See that all gages are operating properly.

"6. Lights, Horn and Windshield Wipers . . . Check to see that the above are in proper working condition.

"7. Steering Mechanism . . . Check for excessive play in steering wheel.

"8. Brakes and Clutch . . . Check brakes for efficiency and clutch for 1½-in. free pedal play (clearance)."

Following this checking-in inspection, the driver will list on a 5x8-in. card, called "Driver's Report on Condition of Truck," any repairs assumed needed. When this card is turned in, it will have a shop follow-up as a "Mechanics' Work Order," on the reverse side of which the mechanic will list materials used and, later, the office will fill in the shop costs for the job.

That night, in the shop, the truck will be further inspected and serviced by a greaser, a tire man, and a washer.

Next morning, after the driver has loaded his truck for the deliveries of the day, he again will be "put on the spot" in the form of a brief "out-inspection" of his truck, a daily procedure each of the five delivery mornings of the week. That inspection usually will be conducted by Supervisor Frank Marek.

Four Types of Daily Checks

IN ADDITION to the driver inspections, the shop makes four different types of brief inspections weekly. The one considered probably most important comes first on Monday and then is repeated on Friday. This inspection is conducted in rather novel manner, developed by Marek when he still was a shop mechanic.

Early one morning, the former shop supervisor dropped a pinch-hitting job in Marek's lap. He asked Frank to check the air in all tires of the delivery trucks that would leave the garage that

(TURN TO PAGE 200, PLEASE)

Tops in QUALITY... Tops in SERVICE

Good mechanics everywhere know that the red-and-black Federal-Mogul box contains the parts they need for *better* engine bearing service.

With more than 7,000 items, Federal-Mogul provides the *complete* engine bearing service: Bearings, bushings, reconditioned and rebabbitted connecting rods, connecting rod bolts and nuts, shims and shim stock.

For quality engine bearings, complete coverage and fast service—*ask your Federal-Mogul Jobber!*

FEDERAL-MOGUL SERVICE
(Division of Federal-Mogul Corporation)
DETROIT 13, MICHIGAN

BEARING
FEDERAL Mogul
SERVICE

Overhauls Cut

Continued from Page 198

day. Marek knew that the required inspection—even in hurry-up manner with a heavy mallet—would be a hard three- or four-hour job; and that it likely would delay the morning start of many of the trucks. Then he got a time-saving idea!

Marek found a 16-ft length of angle iron, which he placed at a 45-deg slant across the exit driveway. As the trucks rolled over the iron, he quickly spotted 10 underinflated tires. It worked so well that during the next six months of such inspections, there were only two flats.

Marek later experimented with three different angle-iron sizes—1¼ in., 1½ in., and 2½ in.—before deciding that the median size (1½ in.) was best suited to our rolling equipment.

Since the original experiment, Marek has refined the procedure to a nicety. As the truck is being driven at slow speed over the angle-iron, set diagonal to its path, each tire will cross the obstruction separately. The crossing over the angle will dent the tire and, thus, reveal any marked degree of tire underinflation.

But, to Marek's practiced eye, it also may reveal several other important conditions. As each truck wheel is separately crossing the iron, it causes a gentle rocking or twisting of the entire truck or tractor body. This not only will show up any tire not properly inflated, but also any abnormal weakness in a spring. In addition, the rocking will show whether the truck load is properly balanced. Finally, it will give some indications as to whether the truck (or trailer) might be loaded beyond its rated tonnage.

If Marek should observe, or even suspect, any one of these conditions, the truck is waved aside and must return to the shop or loading platform for correction.

The detections considered especially rewarding have included several weak springs, the repair of which probably headed off costly spring breakages and maybe road failures. Another recent morning catch came from observation of a slight radiator splash, not evident even to a watchful driver when his truck was in normal travel over a smooth street surface. But this minor leak, if continued, might have resulted in a ruined radiator.

In addition to the Monday-Friday morning angle-iron tests, there are other special procedures on the other days. On Tuesday mornings, the check-out test is on truck appearance. This includes cleanliness of the body, and a quick overall look to catch any body damage not previously reported.

On Wednesday, the test covers lights. The driver is instructed to approach slowly with all lights on, and windshield wiper in motion. His rear-view mirror also will be noted.

On Thursday, the vehicle's clutch and brakes will be given a quick once-over.

(TURN TO PAGE 202, PLEASE)

Recovers from Flood

In spite of a deluge which covered the first floor of its plant, the Gustin-Bacon Mfg. Co., has announced that operations are about normal, and that deliveries of their product (fiber insulation) will remain about normal. A round-the-clock clean up crew has made this possible, and about all of their seven buildings in Kansas City have been rehabilitated, at least in part, from the silt and debris that has remained in the area after the water subsided.

The Stop-and-Going's Good with

C-800 OIL

. . . AND WE QUOTE Mr. E. R. Warkessel, Secretary, Fleischmann's Vienna Model Bakery, Philadelphia:

"We operate . . . 55 trucks and two pleasure cars in the metropolitan area of Philadelphia.

"Much of the work is done in areas in which stops are close together or in heavy traffic . . . with idle time on the motors quite high. Sludge and the attendant evils have been a problem of great concern. We tried various oils, higher range thermostats and other methods . . . but to no avail.

"About two years ago we began to use C-800 heavy duty detergent oil in all new equipment and in motors that were overhauled. Whenever it has been necessary to open these motors it has been gratifying to see the clean conditions prevailing, and in addition the cylinder and shaft diameters have shown a minimum of wear.

"Today our fleet has been brought up to date and we are using C-800 Oil in all of the equipment."

CITIES SERVICE

LIKE FLEISCHMANN'S you can find a motor-saving, money-saving, good answer in the complete Cities Service line, backed by technical consultants qualified to study your lubrication problem and help you keep it licked. Write CITIES SERVICE OIL COMPANY, Room 134, Sixty Wall Tower, New York City 5. Or call the Cities Service office nearest you.

Overhauls Cut

Continued from Page 200

Our shop rule of "one-inch clutch clearance" is considered very important for safety.

On Friday, as stated, the angle-iron tire test is repeated.

The 1500-Mile PM Inspection

THIS brings us to the chief service in the Goldblatt maintenance program. That is the 72-item shop PM inspection scheduled at near 1500 miles, for all truck and tractor units. This servicing normally will come at intervals of four to five weeks.

However, the driver of an assigned truck will not know when may come the exact day for the inspection of his truck. He is not notified in advance. Thus, through a likely period of several days the driver will be kept "on his toes." That is, the alert driver will want to get on his daily report cards, ahead of this shop inspection, a listing of all suspected mechanical flaws which he could have known about in advance.

It had been our shop policy to make some of these PM inspections at shorter periods—that is, some at 1000 miles, others at 5000 or 10,000 miles. But the operations efficiency of our present intervals is well proved by that fact that, during the past three years, the average mileage for the complete overhaul of our power units has been lengthened from former periods of 45,000 to 50,000 miles, up to a recent average of 90,000 miles—with some units reaching 125,000 miles.

Two-Man Inspection Team

THE 72-point "Service Inspection Work Sheet" which we now use was originally borrowed, as to most of its details, about five years ago from other fleets. In our own shop, during the past five years, this 72-point inspection and servicing has been used for all of our trucks and tractors.

As applied to an individual power unit, the inspection schedule can be carried through by a team of two shop mechanics, working together, within an average period of about four hours. However, it is our policy to designate one of these mechanics as "in charge"; and, thus, responsible for the final "OK" on all 72 checks, to prevent any possible skips. Every truck or tractor thus serviced is given a final road test.

Chief advantage of this rather thorough PM inspection at 1500 miles, as we see it, is that it is made when the vehicle, presumably, should be at its peak of operating efficiency. But, before the next 1500-mile inspection—and, certainly, long before our previous 5000-mile PM check—it would be operating at much less efficiency; several parts even might have completely failed.

Faults most often found during these inspections are: Dirty carburetors and spark plugs, plug gaps too great, pitted or worn points, tight clutch pedal, brake maladjustments, dim lights. Another common fault is worn spring suspension parts, which will cause such conditions as improper tracking and, thereby, create trouble and wear tires unduly.

Under our present plan, we are able more efficiently to combine what commonly is called small repairs with major repairs; thus affording considerable saving in shop labor and, also, catching the needed major repairs much sooner.

Toward carrying through our 1500-mile inspections, we have developed for each truck and tractor a master mileage and shop servicing sheet. On it is listed all previous inspections, and a detailed description of repairs made.

Of course, this extension of PM in-

(TURN TO PAGE 208, PLEASE)

"From ten blowouts a month to none - with nylon cord tires"

"Our fleet is tough on tires. We used to average 10 heat blowouts a month. Then, in 1946, we started buying nylon cord tires—and in 20 million tire miles have not experienced a single blowout," says Len Binns, Tire Maintenance Supervisor of Boss-Linco Lines, Inc., Buffalo, New York.

"Nylon cords have helped reduce road delays by 60%. 95% of our drive wheels are on nylons, some of which have gone over 100,000 miles on the original tread.

"We've just bought 65 more nylon cord tires and plan to buy a lot more for our 267 pieces of equipment."

NYLON CORDS PROTECT AGAINST ALL THESE CAUSES OF TIRE FAILURE

Heat—Nylon cords can withstand hotter temperatures than a tire will ever encounter on the highway in normal operations.

Moisture—Nylon's resistance to deterioration by water will save a tire where other tires would fail.

Flex Fatigue—Nylon's resilient strength makes tire cord stand up under the complex compression-tension flexing that takes place every time a tire turns—reduces flex-fatigue failures.

Bruise Damage—Nylon's toughness virtually ends cord ruptures caused by tires hitting curbs and holes at high speeds.

Try a set of nylon cord tires and compare their performance with other tires in every way. Run them on your toughest haul, for your heaviest loads. You'll find that nylon's resistance to heat, moisture, flex fatigue and bruise damage gives you important extras. Nylon cord tires reduce carcass failures, cut down road delays, and give you a higher percentage of successful recaps—which all add up to lower cost per mile. See your dealer, equip one rig, prove it to yourself.

Free Booklet *on nylon tires—write for your copy. Nylon Division, Dept. C-4, E. I. du Pont de Nemours & Co. (Inc.), Wilmington 98, Delaware.*

NOTE: *Du Pont makes nylon fibers, does not produce tires. A number of rubber companies have nylon cord tires available.*

DU PONT
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING... *THROUGH CHEMISTRY*

Overhauls Cut

Continued from Page 202

spections from 1000 miles up to the present 1500 miles makes much more important our daily in-and-out safety inspections by the drivers, and the daily out-inspections by our supervisor.

Road Calls Drop

ONE important proof of the value of our present PM program is the reduction in road calls. This has been showing up in two different ways: One is the reduced use of our road service truck, now seldom called out; the other is lessened road tire servicing. Previously, we were having eight to 10 tire road calls a day, which usually would run up to a total of 10 to 12 hours of road-servicing time. These calls have been reduced to only about 1½ hours per day.

Driver Safety Records

THE company program which relates to "personalized office files for drivers" is rather new. The plan here has been to assemble for each individual driver the details of his safety record; types of accidents, if any, that he has been having; road failures and shop repairs to his truck that might reflect on his personal driving habits; and, also, to include such efficiency ratings on his deliveries as may be available.

These individual driver files thus will have special value in enabling the Deliveries Department to develop more definite general standards for use in future driver selection and training; and also in the planned development of an expanded system of award incentives for safe and efficient deliveries driving.

In the total, we consider that the one most important factor, to get top operating economy for our motor equipment, is the road habits of our drivers. Thus, it is our purpose to help develop better driving through having for our drivers the best of equipment; and then keep this equipment always in top operating condition.

END

Please Resume Reading Page 67

Senate Bill

Continued from Page 192

nition, forfeiting their private carrier status.

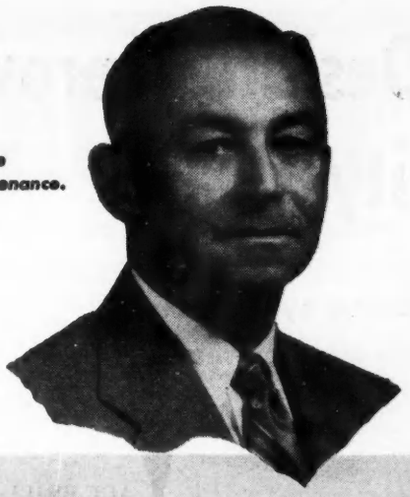
5. The prohibitions against unjust discriminations, undue preferences, or unfair or destructive competitive practices "among the several carriers" would be extended to include shippers.

S. 1889 defines a "common carrier" as follows:

"The term common carrier by motor vehicle means any person who undertakes either directly or by a lease or any other arrangement to transport passengers or property or any class or classes thereof in interstate or foreign commerce by motor vehicle for compensation of any kind, character or description, whether over regular or irregular routes."

Private carriers would be defined as: "The term private carrier of property means any person not included in the term common carrier."

Contract carriers under the bill would be classified as "common carriers."



RUSSELL B. SMITH,
Vice-President in Charge of Equipment and Maintenance.

"Stainless Steel trailers mean $8 to $10 added revenue per average trip"

That's why Smith's Transfer has purchased 71 Stainless units in 18 months

On the highway, one of Smith's Stainless Steel trailers carries approximately 1,200 pounds more payload than units of conventional construction.

SIMPLE arithmetic has proved the advantages of Stainless Steel trailers to the owners of Smith's Transfer Corporation, Staunton, Va. As a result, they've acquired 71 Stainless units in the last 18 months and have 25 more on order.

Russell B. Smith, Vice President in Charge of Equipment and Maintenance, figures it this way: "Stainless trailers carry approximately 1,200 pounds more than units of conventional construction, yielding an added revenue of $8 to $10 per average trip. In less than a year, this would pay the extra cost of Stainless construction.

"As to maintenance," Mr. Smith says, "we have our own shop so we know exactly what happens . . . repairs are quicker and easier on Stainless trailers than on other types, and there is actually less occasion to repair them. We never have to tie up a Stainless rig for painting, either.

"Corrosion due to the chemicals we carry is another problem we've encountered. Some materials corrode and blister around the bottom of the panels in two months. But so far we have not had one bit of trouble in a Stainless Steel trailer."

The big fleets of Stainless trailers now being operated by leading transportation companies are conclusive evidence that this type of construction is economically sound from all angles. It will pay you to follow the example of many fleet owners in specifying Stainless Steel construction.

AMERICAN STEEL & WIRE COMPANY, CLEVELAND · COLUMBIA STEEL COMPANY, SAN FRANCISCO·
NATIONAL TUBE COMPANY, PITTSBURGH · TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM · UNITED STATES STEEL COMPANY, PITTSBURGH
UNITED STATES STEEL SUPPLY COMPANY, WAREHOUSE DISTRIBUTORS, COAST-TO-COAST · UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS TRADE MARK

U·S·S STAINLESS STEEL

SHEETS · STRIP · PLATES · BARS · BILLETS · PIPE · TUBES · WIRE · SPECIAL SECTIONS

1-1379

UNITED STATES STEEL

ACF-Brill Announces Design Improvements on Inter-City Coach

Improved air conditioning system, more baggage space are two of many features

ACF-BRILL MOTORS CO., Philadelphia, has just announced its new inter-city coach. Known as Model IC-41A, it has many refinements over its predecessor IC-37/41. New seats provide comfortable seating for 41 passengers.

Perhaps the most important new feature of interest to maintenance men is the refinement in the air-conditioning system. Instead of a separate engine, as employed by some systems, these new coaches have a simple belt-driven compressor operated by the main power plant.

(TURN TO PAGE 212, PLEASE)

Condensed Specifications

BODY and CHASSIS

Overall length	34 ft, 11½ in.
Overall height, empty	122 in.
Wheelbase	270 in.
Turning radius	42 ft.
Spring suspension	Semi-elliptic, front, rear
Shock absorbers	Hydraulic
Steering gear	Ross, cam-lever
Service brakes	Air, Bendix-Westinghouse
Tires	11.00 x 22
Weight, including 150 gal gasoline	20,900

ENGINE

Hall-Scott, 190-2, horizontal, six cyl, valve-in-head overhead camshaft

Bore	5¼ in.
Stroke	6 in.
Piston displacement	779 cu. in.
Brake horsepower	220 @ 2200 rpm
Maximum torque	625 lb. @ 1300 rpm
SAE Horsepower (taxable)	66.15
Compression ratio	5.6 to 1
Cylinder liners	wet sleeve, hard alloy iron
Pistons	Aluminum alloy
Crankshaft	Fully counterbalanced 7 main bearings
Governor, mechanical	2100-2300 rpm

ELECTRICAL

Generator	12 volt, 1800 watt
Battery (two)	17 plate, 12 volt
Distributor (double ignition)	Delco-Remy
Starting motor	Delco-Remy

FUEL SYSTEM

Carburetor	Zenith, 2 in., updraft, electric choke
Fuel pumps (dual)	Carter
Air Cleaner	Oil bath

POWER TRAIN

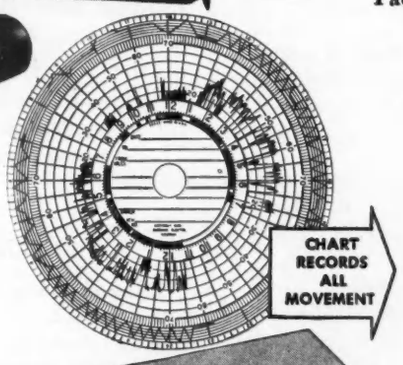
Transmission	Spicer, 4-speed, helical
Clutch	Long, single plate, 17 in.
Propeller shaft	Spicer
Rear axle	Timken, hypoid
Ratio	4 1/9 to 1

TACHOGRAPH

THE TIME-TESTED RECORDING SPEEDOMETER

WINNER OF 1950
NATIONAL SAFETY COUNCIL
FIRST PLACE AWARD FOR MAJOR
FLEETS OPERATING 5,000,000 MILES OR MORE

Safety Records . . . such as established by the Davidson Transfer and Storage Company don't "just happen". . . they reflect expert maintenance . . . careful driving and constant checking



The men at Davidson's who are responsible for the winning of the 1950 National Safety Council Award among major truck fleets traveling 5,000,000 miles or more know what it takes to establish outstanding safety records. That's one of the reasons why Davidson was among the very first over-the-road truckers to equip their entire fleet with Tachographs. These outstanding recording speedometers have been of valuable assistance and today no vehicle in their fleet is ever put on the road unless it is equipped with a Tachograph.

Like Davidson, many over-the-road truck operators have found that Tachographs help in fleet safety programs by encouraging safer driving. They furnish complete accurate reports of every movement of the vehicles. It will pay you to get complete information.

- WHEN ENGINE STARTED
- HOW FAST IT TRAVELED
- HOW LONG ENGINE IDLED
- WHEN VEHICLE STOPPED
- WHEN VEHICLE WAS IN MOTION
- DISTANCE TRAVELED BETWEEN STOPS

DISTRIBUTED BY
Wagner Electric Corporation

Wagner Electric Corporation
6476 PLYMOUTH AVE., ST. LOUIS 14, MO.
Please send a copy of Bulletin SU-3B.

Name and Position_____
Company_____
Address_____
City_____ State_____
We operate_____ Vehicles
(NUMBER)

SS1-8

ACF-Brill Announces Improvements

Continued from Page 210

The air-conditioning equipment is ACF-Carrier design and construction. The two-cylinder 12 cu ft freon compressor is mounted on the right-hand side and to the rear of the entrance step.

The air conditioning condenser is mounted on the right side, just to the rear of the freon compressor. The dual condenser fans are belt-driven from a pulley on the front end of the engine crankshaft. The evaporator is mounted in an overhead compartment at the front end.

Air is drawn over the evaporator by three sirocco-type blowers, from which it is distributed into the coach through perforations in the center ceiling panel. Air also is distributed at the sides of the coach above the side windows.

A hot-water coil of finned tubing, in back of the evaporator, works in conjunction with a water valve and cycling thermostat to provide reheat type of control for the system.

The control panel, at the driver's location, is provided with a switch so that the ventilating blowers can be operated independent of air conditioning.

Ventilation air is taken through a grille on the roof above the windshield. Both outside and return air pass through a filter before going to the evaporator. A dash ventilator, manually operated by the driver, also is provided.

More Baggage Space

WHILE the exterior design features essentially are in the nature of more attractive appearance refinements, interior styling has undergone some major improvements. Perhaps the most unique of these features, and one which applies both to the exterior and interior, is the greatly increased baggage space—both for checked and local hand baggage. In addition to larger parcel racks and underseat baggage accommodations, shown in the accompanying illustration, this model provides 118 cu ft of baggage space in exterior compartments, amidship and rear.

The clean-cut restyled interior also features new indirect lighting by means of lights mounted in the edges of the parcel racks. Focused-type, individually controlled reading lights for passengers are mounted near the

(TURN TO PAGE 214, PLEASE)

Could Be . . .

The road service mechanic stopped for a little chat with an old East Tennessee hill country farmer, who was noted for his fine watermelons. "Uncle Si," queried the road service man, "how in the world are you able to grow such mouth watering melons. Is it the fertilizer you use which stimulates the growth of your melon plants so?"

"I gonneys, I cain't rightly say fur sartin," replied Uncle Si. "I hain't never been able to figger out if'n the stuff jes' natur'ly stimerlates the melons or whuther it's jes' so dagnabbed repulsive that they tries to grow away from hit!"

ACF-Brill Changes

Continued from Page 212

side wall above the windows. Lighting also is provided in the underseat baggage compartments. Exterior baggage compartments are illuminated by lights controlled by light switches.

All side windows are of the sliding type, and of full-view size. The heat absorbing glass is mounted in the latest design "push-out sash" throughout.

Semi-Elliptic Springs

ANOTHER of this model's various new design and construction features is the use of long, semi-elliptic springs.

The front springs are 64 in. long and 4 in. wide. The rear set is 70 in. long and 5 in. wide. The front springs are overslung on the axle, while the rear set is underslung. Shackle pins are the threaded-type of hardened steel.

A single cylindrical fuel tank, of 150-gal capacity, is standard equipment for this model; replacing square tanks used previously. The new arrangement permits easy and rapid substitution of LPG tanks, if desired.

The tank is mounted between the rear axle and the rear baggage compartment. It is filled from the right side and equipped with a Ventalarm.

The ignition system is waterproof. The generator is of 1800-watt capacity.

Body and Chassis Features

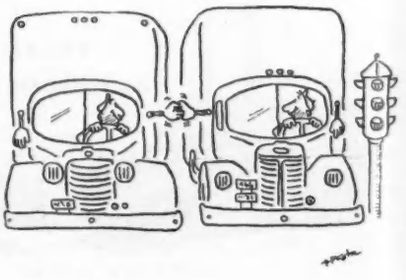
THE body and frame, of integral construction, are made of aluminum and steel. Due to the shortage of aluminum and stainless steel, silver-siding, if desired, is excellently simulated by aluminum paint with appropriate shading for the third dimension effect.

The one-piece sedan-type entrance door, with stationary sash unit, is air-operated by a valve at the driver's location. Means is provided for operating the door from exterior of the coach by a separate air valve.

An emergency door is located ahead of the rear axle, on the left side. A signal is provided at the driver's position to indicate whether the emergency door is locked. This door is provided with a three-point latch for maximum safety.

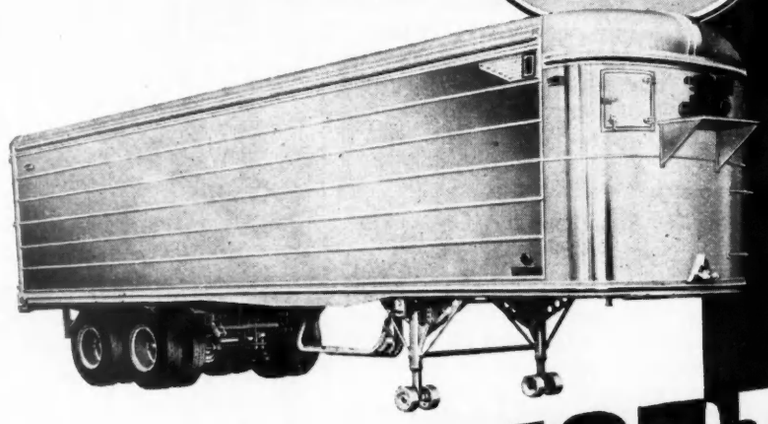
The coach has center-point steering linkage, which utilizes a bell crank on the axle with one arm connected longitudinally to the steering gear and the other transversely to the steering knuckle. This arrangement permits a sharp turning radius—42 ft—for the 270-in. wheelbase.

The new design and construction features include greater accessibility to all parts for maintenance. Even the small components—such as the air-operated windshield wiper engine—are readily accessible; in this case, from the interior.



LOOK AHEAD..

with a DORSEY VAN



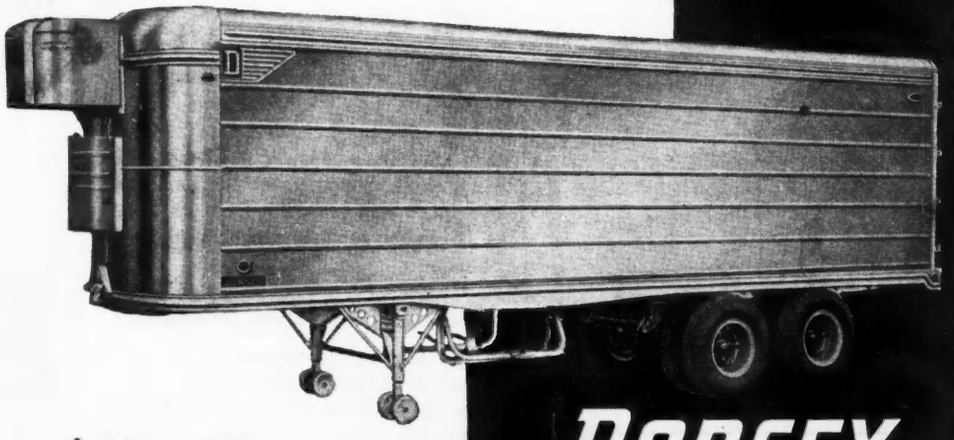
Produce Van

A Dorsey Fleet Chief Produce Van, while a specialized unit, is just as capable of hauling any class of freight. It need never run empty.

MORE and MORE

PERISHABLES ARE BEING TRANSPORTED OVER THE HIGHWAYS

DORSEY trailer equipment is available for every refrigeration requirement regardless of the operation. Why not modernize equipment and take advantage of this additional source of revenue? Basic structure is the same as the famous Fleet Chief Van which means you can haul anything!



Refrigerator Van

The Dorsey Fleet Chief Refrigerator Van can be used to transport anything from citrus concentrate to fresh oranges, from frozen foods to freight.

for any Transportation Requirement

SEE YOUR NEAREST DORSEY DISTRIBUTOR

DORSEY TRAILERS

ELBA
ALABAMA

CCJ Reports

Continued from Page 142

ATA Fights Leasing Order

The Interstate Commerce Commission has denied all petitions for reconsideration of its decision in Ex Parte MC-43, Lease and Interchange of Vehicles by Motor Carriers. This action means American Trucking Associations will be forced to take the matter to the courts.

Judicial action by A.T.A., already authorized by the A.T.A. Executive Committee, will further delay effectiveness of this restrictive order which the I.C.C., itself, recently postponed from Aug. 1, 1951 to Sept. 1, 1951.

Construction Change May Be Required by ICC

The second draft of ICC Bureau of Service's specifications MC-305 on cargo tank construction will require that all future cargo tanks be built with compartments of not more than 1200 gallons each.

The compartment requirement will be made by eliminating the present exception of full-drop delivery trailers from present compartment requirement. The paragraph to be eliminated reads: "No bulkhead shall be required in any cargo tank regardless of capacity which is designed for service in which there will never be less than 80 per cent of the capacity volume of the tank while in transportation over the highway and which, in service, is to discharge its entire contents at one unloading point."

TTMA Convention Plans

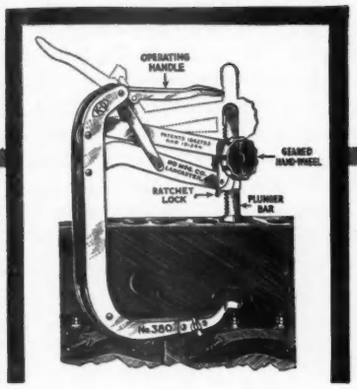
Arrangements have just been made to hold the Eleventh Annual Convention, Truck-Trailer Manufacturers Assn., at the Hotel Shamrock in Houston, Texas, January 27-30, 1952. This change from our previous date and place was voted by TTMA's Board of Directors at their recent meeting in Chicago.

Waukesha Declares Dividend

At a regular meeting of the Board of Directors of the Waukesha Motor Company, the regular quarterly dividend of twenty-five cents (25¢) per share was declared payable October 1, 1951 to the stockholders of record at the close of business September 6, 1951. The dividend is subject to a deduction of 2.94 per cent to cover that portion of Wisconsin dividend privilege tax applicable to income derived from property located and business transacted within the State of Wisconsin.

(TURN TO PAGE 258, PLEASE)

Time savers • Finger savers

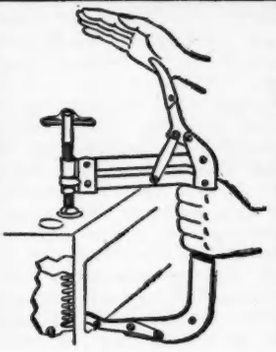


380 COMPRESSOR

Services nearly all L-head, valve-in-head motors, old or new. Exclusive automatic depth adjustment and quick operating handle make it fast, easy to use.

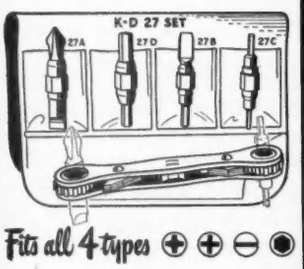
920 SET FOR FORDS

Service Ford-built V-8s from '32 to date (except 60 & 150 hp) with this Valve Guide Puller Set. Pulls assemblies fast, no matter how tight they're stuck.



385 COMPRESSOR

Services all models Chevrolet. Adaptable to other overheads including Buick & Wisconsin Motors (VE4, VF4, AB, AK) and other industrials, also L-heads with manifolds off.

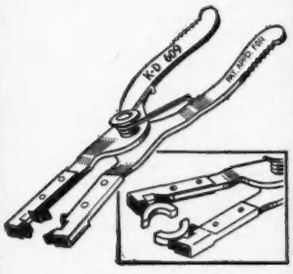


OFFSET RATCHET BIT SET

A 3⅞" long double end ratchet wrench with 8 bits. One for Phillips, Reed & Prince Screws Nos. 0-12. 5 bits for hex keys, sizes 5/64" to 3/16". 2 bits for standard screw slots. K-D No. 27.

49 TRAV-L-RAK

Deluxe auto clothes hanger. Every motorist a prospect for a pair. Ready to use . . . no bolting or assembling. Spill-proof, rustproof. 12 on display, nice profit returns.



MAGNETIC INSERTER

K-D 609. Specially designed to handle split collar type keepers on Ford Trucks 8EQ, 8MTH and other motors using free type valves. Self supporting. Only tool available for the job!

WRITE FOR FREE COPY LATEST CATALOG. COMPLETE DESCRIPTIONS OF K-D LINE. WELL ILLUSTRATED, PLUS VALVE SERVICE CHART FOR ALL FORD-BUILT MOTORS SINCE 1928.

K-D® TOOLS

K-D MFG CO LANCASTER, PA.

CCJ Reports

Continued from Page 256

Scrap Program Launched

An all-out scrap collection drive is underway throughout the automotive industry, it was announced today by George W. Mason, president of the Automobile Manufacturers Assn. Pointing out the defense program calls for an increasing supply of scrap steel, Mr. Mason, who also is president of Nash-Kelvinator Corporation, said that this concerted, industry-wide effort is being coordinated by a special scrap subcommittee of the AMA. The committee is headed by J. A. LaCourse, Packard Motor Car Company.

Other members include C. M. Brown, Studebaker Corporation; A. J. Campau, General Motors Corporation; A. B. Groff, Hudson Motor Car Company; Warren M. Huff, Kaiser-Frazer Corporation; A. G. Koepfgen, Nash-Kelvinator Corporation; R. P. Laughna, Ford Motor Company; W. A. Stickle, Chrysler Corporation.

Willys Sales Increase

Sales of $156,733,088 for Willys-Overland Motors, Inc., in the nine months ended June 30, three-quarters of its 1951 fiscal year, have been reported to stockholders. This is an increase of 117 per cent over the comparable period of 1950.

The bulk of the nine months' volume (72.4 per cent) was derived from peacetime products — station wagons, civilian Jeeps, trucks and sedan deliveries, and forgings, castings and engines for other manufacturers, the report showed. The remaining 27.6 per cent came from Jeeps and Jeep parts for the Armed Services.

Vehicle Show Announced

The 1952 National Transport Vehicle Show and Fleet Maintenance Exposition will be held in New York City February 26 through 28, according to announcement issued from the headquarters of the Automotive Transport Trades Council, 100 Fifth Avenue, New York, at the close of a meeting at which plans were laid for next year's convention and show.

END

Please Resume Reading Page 31

★★★★★★★★★★★★★★★★★★★★★★★★★

JOBSERVATION

Error is the discipline through which we advance

★★★★★★★★★★★★★★★★★★★★★★★★★

Detroit Dispatch

Continued from Page 31

about by the 12½¢-an-hour wage increase that is spreading throughout the tire industry. However, there probably will be the usual discounting at the dealer level if a heavy surplus develops.

. . . But Batteries are in Doubt

At present the supply of batteries is very high and while the lead situation is not too bright at the moment, there appears to be no prospect of a shortage of batteries in the offing.

Field inventories are at a very high level because of good production in the first half of this year; also, because moderate temperatures this summer have cut down the number of battery failures. However, battery makers say that users should follow maintenance and conservation practices, because with the unsettled state of world affairs and the tight lead supply, no one can tell what the future will bring.

Plated Aluminum Grid Battery Looks Good

Development of a new type battery by the University of Michigan and Army Ordnance has created considerable interest in the automotive field. Further investigation reveals, however, that while initial tests have shown the new battery to operate effectively at temperatures ranging from 65 deg below zero to 165 deg above, much more testing and developing will have to be done before its commercial value can be established.

(TURN TO PAGE 262, PLEASE)

Classified Advertisement

WANTED: Manufacturer's representative to handle line of Commercial Trailer Equipment. For complete details write Box 27, Commercial Car Journal, 5601 Chestnut St., Philadelphia 39, Pa.

the factory's the place

to eliminate high temperature risks from engines and torque convertors

This bus, operating in the Southwest, is powered by a Cummins JBS-600, 150 hp diesel engine with a built-in Ross Type BCF Exchanger for maintaining correct lube oil temperature.

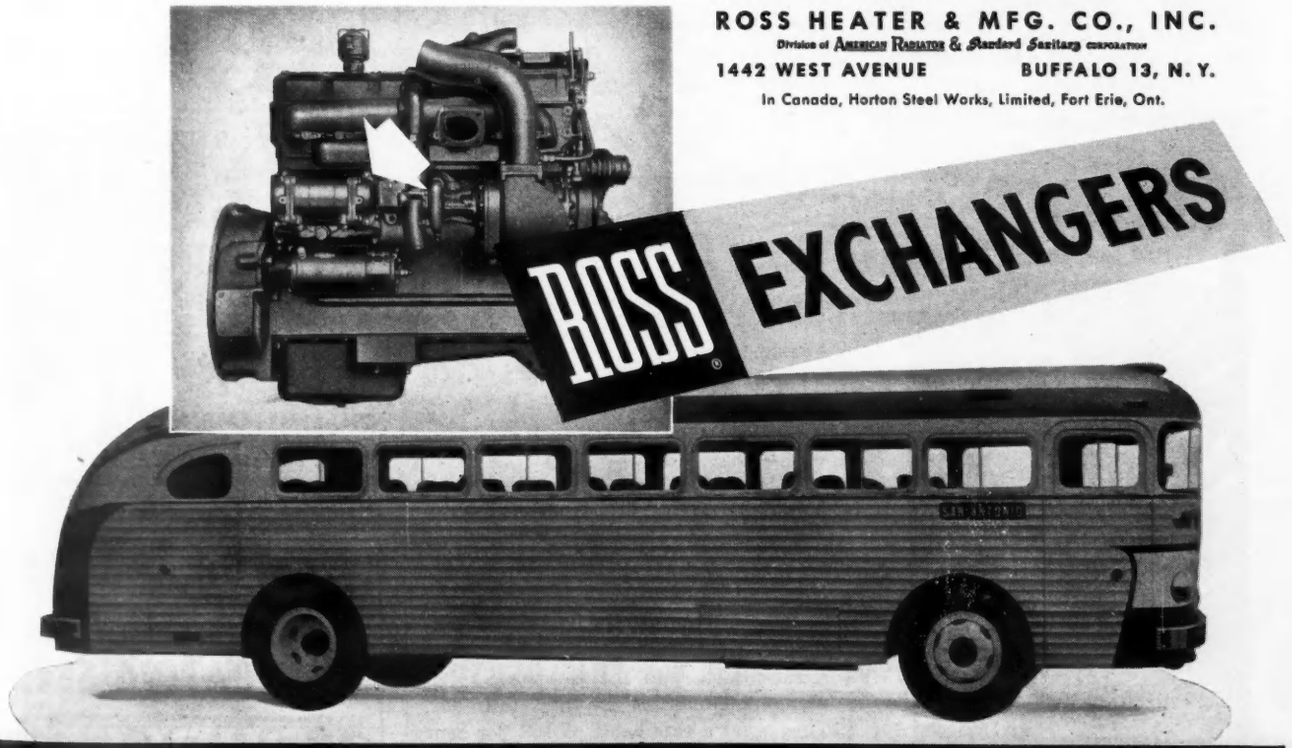
Across the country from North to South, East to West, thousands more are similarly safeguarded at the factory. Bus, truck and engine manufacturers have come to realize that with the growing use of larger, faster motors, necessitated by longer runs and tighter schedules, added precautions must be taken against excessive oil temperatures. And rightly, they feel that the place for installing such protection is at the factory... *before* the vehicles are delivered!

The same applies when torque convertors are called for. Factory orders read: "equipped with Ross Exchanger". For here, too, expensive damage is risked if overheating is permitted.

Yes, a new and important component has become standard with the automotive industry. Chosen for its durable all-copper and copper alloy construction, its compactness and ease of installation, its complete standardization and availability from stock ... features that have unrivaled advantages to this production-minded industry... the Ross Type BCF Exchanger has won nationwide approval by both builder and operator of buses and trucks.

DESCRIPTIVE LITERATURE: on stock models, as well as provisions for specially designed connections or assemblies, sent on request. Write, asking for Bulletin 1.1K1.

ROSS HEATER & MFG. CO., INC.
Division of American Radiator & Standard Sanitary Corporation
1442 WEST AVENUE BUFFALO 13, N. Y.
In Canada, Horton Steel Works, Limited, Fort Erie, Ont.



Serving home and industry

AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATER • TONAWANDA IRON

Detroit Dispatch

Continued from Page 260

It differs from conventional batteries in that pure lead is plated on an aluminum grid core instead of the conventional lead antimony alloy. This not only makes the battery about one-third lighter, but makes for a low self-discharge rate when not in use. Development is with a 12-volt unit, but it could be produced in the popular 6-volt size.

Battery manufacturers are interested but commercial application will have to wait for further test data on the battery itself and determination of the economic feasibility of changing over present manufacturing equipment to make the new type battery. There is as yet no cost data to indicate whether the battery would be more or less expensive than current types.

END

Please Resume Reading Page 37

17 Mail Contracts Awarded

The Post Office Department has awarded 17 contracts for routes ranging from 24 to 372 miles to trucking firms in the St. Louis, Mo., area. The routes were awarded on the basis of low bid, and the average bid came to 19 cents a mile. The winning bids were among a bid group of 246 received for the 17 routes. It has been estimated that the saving to the postal authorities will gross $365,000. This figure is not final, officials pointed out, due to the fact that setting a figure on savings is not practical, due to hidden costs and rate changes which the postal system encounters regularly. Of particular note, however, is the recent request filed with the Interstate Commerce Commission by the railroads. They want a rate boost of 168 per cent over the present rate of 40½ cents per mile for 60-ft storage mail cars, including handling and separation charges.